

NOTICE

All drawings located at the end of the document.

**DRAFT CLOSEOUT REPORT
FOR IHSS GROUP 600-1
(PAC 600-1001)**

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ACRONYMS

AL	action level
AR	Administrative Record
CAD/ROD	Corrective Action Decision/Record of Decision
CDPHE	Colorado Department of Public Health and Environment
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CM	Corrective Measure
COC	contaminant of concern
CRA	Comprehensive Risk Assessment
D&D	Decontamination and Decommissioning
DOE	U.S. Department of Energy
dpm	disintegrations per minute
DQA	Data Quality Assessment
DQO	Data Quality Objective
EDD	electronic data deliverable
EPA	U.S. Environmental Protection Agency
ER	Environmental Restoration
ER RSOP	Environmental Restoration RFCA Standard Operating Procedure
FS	Feasibility Study
HRR	Historical Release Report
IA	Industrial Area
IASAP	Industrial Area Sampling and Analysis Plan
IHSS	Individual Hazardous Substance Site
K-H	Kaiser-Hill Company L.L.C.
lbs	pounds
LCS	laboratory control sample
LD	laboratory duplicate
LLW	low-level waste
MDA	Minimum Detectable Activity
MDL	method detection limit
mg/kg	milligrams per kilogram
MS	matrix spike
MSD	matrix spike duplicate
NA	not applicable
ND	not detected
NLR	No Longer Representative
PAC	Potential Area of Concern
PARCCS	precision, accuracy, representativeness, completeness, comparability, and sensitivity
pCi/g	picocuries per gram
PCOC	potential contaminant of concern
QC	Quality Control
RAO	Remedial Action Objective
RCRA	Resource Conservation and Recovery Act

RFI	RCRA Facility Investigation
RFCA	Rocky Flats Cleanup Agreement
RFETS	Rocky Flats Environmental Technology Site
RI	Remedial Investigation
RISS	Remediation, Industrial D&D, & Site Services
RPD	relative percent difference
RQL	required quantitation limit
RSOP	RFCA Standard Operating Procedure
SAP	Sampling and Analysis Plan
Site	Rocky Flats Environmental Technology Site
SOR	Sum of Ratio
SVOC	semivolatile organic compound
µg/kg	micrograms per kilogram
µg/L	micrograms per liter
VOC	volatile organic compound
V&V	verification and validation

1.0 INTRODUCTION

This closeout report summarizes characterization and accelerated action activities conducted at Individual Hazardous Substance Site (IHSS) Group 600-1 PAC 600-1001 – Temporary Waste Storage Building, at the Rocky Flats Environmental Technology Site (RFETS or Site) in Golden, Colorado. Accelerated action activities were planned and executed in accordance with the Industrial Area (IA) Sampling and Analysis Plan (SAP) (DOE 2001a), IASAP Addendum #IA-02-01 (DOE 2001b), and the Environmental Restoration (ER) Rocky Flats Cleanup Agreement (RFCA) Standard Operating Protocol (RSOP) for Routine Soil Remediation (ER RSOP) (DOE 2002a). Notification of the planned activities was provided in ER RSOP Notification #02-04 (DOE 2002b), which was approved by the Colorado Department of Public Health and Environment (CDPHE) on June 19, 2002.

This report contains the information necessary to demonstrate attainment of cleanup objectives and final closure of IHSS Group 600-1. This information includes:

- Site Characterization Information
 - Description of site characterization activities, and
 - Site characterization data, including data tables and maps;
- Site Accelerated Action Information
 - Description of the accelerated action, including the rationale for the action and map of the target remediation area,
 - Map of the actual remediation area, including bounds of the excavation, and dates and durations of specific remedial activities,
 - Photographs documenting site characterization, remediation, and reclamation activities;
- Confirmation sampling data, including data tables and location maps, as well as a comparison of the confirmation data to applicable cleanup goals;
- Description of deviations from the ER RSOP;
- Description of near-term stewardship actions and long-term stewardship recommendations;
- Description of site condition after remediation that includes a map of residual contamination above background plus two standard deviations, method detection limits (MDLs), and Tier II Action Levels (ALs);
- Disposition of wastes;
- Site reclamation;

- Table of No Longer Representative (NLR) locations and sample numbers that have been remediated. These data will be used to mark database records so they are not used in the Comprehensive Risk Assessment (CRA) or other Site analyses; and
- Data quality assessment (DQA), including comparison of confirmation data with project data quality objectives (DQOs).

2.0 IHSS GROUP 600-1 ACTIVITIES

IHSS Group 600-1 consists of the Potential Area of Concern (PAC) 600-1001 – Temporary Waste Storage - Building 663. The location of IHSS Group 600-1 is shown on Figure 1, and PAC 600-1001 is shown on Figure 2.

2.1 Site Characterization

IHSS Group 600-1 characterization information consists of historical knowledge, previously collected analytical data, and new data. Historical information for IHSS Group 600-1 is presented below. IHSS Group 600-1 analytical data is presented in Section 2.1.5.

2.1.1 PAC 600-1001, Temporary Waste Storage – Building 663

Two temporary buildings were constructed on concrete slabs for use during the initial Plant construction in the early 1950s. These buildings were located where Building 662 and Building 663 were located. The wooden structures were removed prior to 1954; however, the concrete slabs remained. The slabs from Buildings 662 and 663, as well as the area around them, were used for storage purposes.

In April 1954, it was proposed that the Building 663 slab be used for temporary storage of noncombustible waste awaiting disposal. The slab was thought to be located east of Building 334 and Building 444 (DOE 1992). Most of the waste stored at this slab came from these two buildings.

Storage operations began in May 1954, when 302 drums of graphite and 49 drums of liquid waste were placed on the Building 663 slab. Waste coolant drums were also stored on the slab. In November 1954, all of the drums were removed from the slab; however, storage at the area later resumed.

The area was found to be an advantageous loading area, and the slab east of Building 663 was connected to a loading facility. The northern end of the loading facility was reinforced and refinished with concrete in October 1958.

On October 15, 1960, a waste storage building was erected on the Building 663 slab. Accumulated drums of waste from the production buildings were moved to the building. In November 1962, drums and boxes of waste from Buildings 771 and 774 were moved to the western side of Building 663 for outside storage.

Documented releases of radionuclides, oil, coolant, perclene, and acids that occurred at these storage areas are described in the HRR (DOE 1992 and Appendix C of the IASAP (DOE 2001

2.1.2 Analytical Data – IHSS Group 600-1

As described in IASAP Addendum #IA-02-01 (DOE 2001b), potential contaminants of concern (PCOCs) at IHSS Group 600-1 were determined based on historical information (DOE 1998 – 2001) and data collected during previous studies (DOE 2001a, DOE 2000).

These pre-accelerated action data, greater than background plus two standard deviations or MDLs, along with RFCA Tier I and Tier II AL values are shown on Figure 3. Results from previous sampling and analysis of surface and subsurface soils at IHSS Group 600-1 indicated that radionuclides, metals, and semivolatile organic compounds (SVOCs) were present in surface soil and radionuclides, metals, SVOCs, and volatile organic compounds (VOCs) were present in subsurface soil. Proposed sampling locations and specifications are listed in Table 1.

Accelerated action sample locations and analytical results associated with IHSS Group 600-1 are presented on Figure 4 and in Table 2. Only results greater than background mean plus two standard deviations or reporting limits are shown. The data indicated that radionuclides were present at activities greater than RFCA Tier I ALs at one location in the southeastern portion of Building 663. Additionally, benzo(a)pyrene was present at concentrations greater than RFCA Tier II ALs at three locations near Building 663 and is associated with the asphalt in that area.

2.2 Sum of Ratios and Area of Concern

RFCA Tier II and Tier I sum of ratios (SORs) were calculated to determine whether there were RFCA AL exceedances for IHSS Group 600-1 locations. SOR calculations were based on accelerated action analytical data and the following list of contaminants of concern (COCs):

- Radionuclides (americium-241, plutonium-239/240, uranium-234, uranium-235, and uranium-238);
- Metals (arsenic, copper, mercury, lead, etc.); and
- Organics (VOCs and SVOCs).

The COCs are based on data that exceed background mean plus two standard deviations or MDLs. Metals and organics were grouped together for nonradionuclide SOR calculations. Plutonium, americium, and uranium were grouped together for radionuclide SOR calculations. Table 3 presents the SORs for surface soil. The radionuclide Tier I and Tier II SORs for the sampling location in the southeastern portion of Building 663 were 5.87 and 33.34 respectively. Two nonradionuclide SORs were greater than the threshold value of 1 at the three locations with benzo(a)pyrene at concentrations greater than the RFCA Tier II AL. All other SORs were below the Tier II threshold value of 1. SORs were calculated for all locations with analytical results greater than background mean plus two standard deviations or reporting limits.

Table 1
IHSS Group 600-1 – Characterization Sampling Specifications

Location Code	Easting	Northing	Media	Depth Interval (ft)	Analyte	Onsite Laboratory Method	Offsite Laboratory Method
CB37-001	2083070.72	748936.48	Surface Soil	0-0.5'	Radionuclides SVOCs	HPGe NA	Alpha Spec 8270
CB37-001	2083070.72	748936.48	Subsurface Soil	.5'-2.5'	Radionuclides SVOCs VOCs	HPGe NA 8260	8260 8270 8260
CB37-002	2083102.00	748954.29	Surface Soil	0-0.5'	Radionuclides SVOCs	HPGe NA	Alpha Spec 8270
CB37-002	2083102.00	748954.29	Subsurface Soil	.5'-2.5'	Radionuclides SVOCs VOCs	HPGe NA 8260	8260 8270 8260
CB37-003	2083070.51	748900.48	Surface Soil	0-0.5'	Radionuclides SVOCs	HPGe NA	Alpha Spec 8270
CB37-003	2083070.51	748900.48	Subsurface Soil	.5'-2.5'	Radionuclides SVOCs VOCs	HPGe NA 8260	8260 8270 8260
CB37-004	2083101.79	748918.30	Surface Soil	0-0.5'	Radionuclides SVOCs	HPGe NA	Alpha Spec 8270
CB37-004	2083101.79	748918.30	Subsurface Soil	.5'-2.5'	Radionuclides SVOCs VOCs	HPGe NA 8260	8260 8270 8260
CB37-005	2083133.07	748936.11	Surface Soil	0-0.5'	Radionuclides SVOCs	HPGe NA	Alpha Spec 8270
CB37-005	2083133.07	748936.11	Subsurface Soil	.5'-2.5'	Radionuclides SVOCs VOCs	HPGe NA 8260	8260 8270 8260
CB37-006	2083070.29	748864.48	Surface Soil	0-0.5'	Radionuclides SVOCs	HPGe NA	Alpha Spec 8270
CB37-006	2083070.29	748864.48	Subsurface Soil	.5'-2.5'	Radionuclides SVOCs VOCs	HPGe NA 8260	8260 8270 8260
CB37-007	2083101.58	748882.30	Surface Soil	0-0.5'	Radionuclides SVOCs	HPGe NA	Alpha Spec 8270

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Location Code	Easting	Northing	Media	Depth Interval (ft)	Analyte	Onsite Laboratory Method	Offsite Laboratory Method
CB37-007	2083101.58	748882.30	Subsurface Soil	.5'-2.5'	Radionuclides SVOCs VOCs	HPGe NA 8260	8260 8270 8260
CB37-008	2083132.86	748900.11	Surface Soil	0-0.5'	Radionuclides SVOCs	HPGe NA	Alpha Spec 8270
CB37-008	2083132.86	748900.11	Subsurface Soil	.5'-2.5'	Radionuclides SVOCs VOCs	HPGe NA 8260	8260 8270 8260
CB37-009	2083070.08	748828.48	Surface Soil	0-0.5'	Radionuclides SVOCs	HPGe NA	Alpha Spec 8270
CB37-009	2083070.08	748828.48	Subsurface Soil	.5'-2.5'	Radionuclides SVOCs VOCs	HPGe NA 8260	8260 8270 8260
CB37-010	2083101.36	748846.30	Surface Soil	0-0.5'	Radionuclides SVOCs	HPGe NA	Alpha Spec 8270
CB37-010	2083101.36	748846.30	Subsurface Soil	.5'-2.5'	Radionuclides SVOCs VOCs	HPGe NA 8260	8260 8270 8260
CB37-011	2083132.65	748864.11	Surface Soil	0-0.5'	Radionuclides SVOCs	HPGe NA	Alpha Spec 8270
CB37-011	2083132.65	748864.11	Subsurface Soil	.5'-2.5'	Radionuclides SVOCs VOCs	HPGe NA 8260	8260 8270 8260
CB37-012	2083132.43	748828.11	Surface Soil	0-0.5'	Radionuclides SVOCs	HPGe NA	Alpha Spec 8270
CB37-012	2083132.43	748828.11	Subsurface Soil	.5'-2.5'	Radionuclides SVOCs VOCs	HPGe NA 8260	8260 8270 8260
CB38-001	2083070.94	748972.48	Surface Soil	0-0.5'	Radionuclides SVOCs	HPGe NA	Alpha Spec 8270
CB38-001	2083070.94	748972.48	Subsurface Soil	.5'-2.5'	Radionuclides SVOCs VOCs	HPGe NA 8260	8260 8270 8260
CB38-002	2083133.29	748972.11	Surface Soil	0-0.5'	Radionuclides SVOCs	HPGe NA	Alpha Spec 8270
CB38-002	2083133.29	748972.11	Subsurface Soil	.5'-2.5'	Radionuclides SVOCs VOCs	HPGe NA 8260	8260 8270 8260

Location Code	Easting	Northing	Media	Depth Interval (ft)	Analyte	Onsite Laboratory Method	Offsite Laboratory Method
CC37-001	2083164.36	748953.92	Surface Soil	0-0.5'	Radionuclides SVOCs	HPGe NA	Alpha Spec 8270
CC37-001	2083164.36	748953.92	Subsurface Soil	.5'-2.5'	Radionuclides SVOCs VOCs	HPGe NA 8260	8260 8270 8260
CC37-002	2083164.14	748917.93	Surface Soil	0-0.5'	Radionuclides SVOCs	HPGe NA	Alpha Spec 8270
CC37-002	2083164.14	748917.93	Subsurface Soil	.5'-2.5'	Radionuclides SVOCs VOCs	HPGe NA 8260	8260 8270 8260
CC37-003	2083195.43	748935.74	Surface Soil	0-0.5'	Radionuclides SVOCs	HPGe NA	Alpha Spec 8270
CC37-003	2083195.43	748935.74	Subsurface Soil	.5'-2.5'	Radionuclides SVOCs VOCs	HPGe NA 8260	8260 8270 8260
CC37-004	2083226.71	748953.56	Surface Soil	0-0.5'	Radionuclides SVOCs	HPGe NA	Alpha Spec 8270
CC37-004	2083226.71	748953.56	Subsurface Soil	.5'-2.5'	Radionuclides SVOCs VOCs	HPGe NA 8260	8260 8270 8260
CC37-005	2083163.93	748881.93	Surface Soil	0-0.5'	Radionuclides SVOCs	HPGe NA	Alpha Spec 8270
CC37-005	2083163.93	748881.93	Subsurface Soil	.5'-2.5'	Radionuclides SVOCs VOCs	HPGe NA 8260	8260 8270 8260
CC37-006	2083195.21	748899.74	Surface Soil	0-0.5'	Radionuclides SVOCs	HPGe NA	Alpha Spec 8270
CC37-006	2083195.21	748899.74	Subsurface Soil	.5'-2.5'	Radionuclides SVOCs VOCs	HPGe NA 8260	8260 8270 8260
CC37-007	2083226.50	748917.56	Surface Soil	0-0.5'	Radionuclides SVOCs	HPGe NA	Alpha Spec 8270
CC37-007	2083226.50	748917.56	Subsurface Soil	.5'-2.5'	Radionuclides SVOCs VOCs	HPGe NA 8260	8260 8270 8260
CC37-008	2083257.78	748935.37	Surface Soil	0-0.5'	Radionuclides SVOCs	HPGe NA	Alpha Spec 8270
CC37-008	2083257.78	748935.37	Subsurface Soil	.5'-2.5'	Radionuclides SVOCs	HPGe NA	8260 8270

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Location Code	Easting	Northing	Media	Depth Interval (ft)	Analyte	Onsite Laboratory Method	Offsite Laboratory Method
CC37-009	2083289.06	748953.19	Surface Soil	0-0.5'	VOCs	8260	8260
CC37-009	2083289.06	748953.19	Subsurface Soil	.5'-2.5'	Radionuclides SVOCs	HPGe NA	Alpha Spec 8270
CC37-010	2083163.72	748845.93	Surface Soil	0-0.5'	Radionuclides SVOCs	HPGe NA	Alpha Spec 8270
CC37-010	2083163.72	748845.93	Subsurface Soil	.5'-2.5'	Radionuclides SVOCs	HPGe NA	Alpha Spec 8270
CC37-011	2083195.00	748863.74	Surface Soil	0-0.5'	Radionuclides SVOCs	HPGe NA	Alpha Spec 8270
CC37-011	2083195.00	748863.74	Subsurface Soil	.5'-2.5'	Radionuclides SVOCs	HPGe NA	Alpha Spec 8270
CC37-012	2083226.28	748881.56	Surface Soil	0-0.5'	Radionuclides SVOCs	HPGe NA	Alpha Spec 8270
CC37-012	2083226.28	748881.56	Subsurface Soil	.5'-2.5'	Radionuclides SVOCs	HPGe NA	Alpha Spec 8270
CC37-013	2083257.57	748899.37	Surface Soil	0-0.5'	Radionuclides SVOCs	HPGe NA	Alpha Spec 8270
CC37-013	2083257.57	748899.37	Subsurface Soil	.5'-2.5'	Radionuclides SVOCs	HPGe NA	Alpha Spec 8270
CC37-014	2083288.85	748917.19	Surface Soil	0-0.5'	Radionuclides SVOCs	HPGe NA	Alpha Spec 8270
CC37-014	2083288.85	748917.19	Subsurface Soil	.5'-2.5'	Radionuclides SVOCs	HPGe NA	Alpha Spec 8270
CC37-015	2083194.79	748827.74	Surface Soil	0-0.5'	Radionuclides SVOCs	HPGe NA	Alpha Spec 8270
CC37-015	2083194.79	748827.74	Subsurface Soil	.5'-2.5'	Radionuclides SVOCs	HPGe NA	Alpha Spec 8270
CC37-016	2083226.07	748845.56	Surface Soil	0-0.5'	Radionuclides SVOCs	HPGe NA	Alpha Spec 8270

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Location Code	Easting	Northing	Media	Depth Interval (ft)	Analyte	Onsite Laboratory Method	Offsite Laboratory Method
CC37-016	2083226.07	748845.56	Subsurface Soil	.5'-2.5'	Radionuclides SVOCs VOCs	HPGE NA 8260	8260 8270 8260
CC37-017	20832257.35	748863.37	Surface Soil	0-0.5'	Radionuclides SVOCs	HPGe NA	Alpha Spec 8270
CC37-017	20832257.35	748863.37	Subsurface Soil	.5'-2.5'	Radionuclides SVOCs VOCs	HPGE NA 8260	8260 8270 8260
CC37-018	2083288.64	748881.19	Surface Soil	0-0.5'	Radionuclides SVOCs	HPGe NA	Alpha Spec 8270
CC37-018	2083288.64	748881.19	Subsurface Soil	.5'-2.5'	Radionuclides SVOCs VOCs	HPGE NA 8260	8260 8270 8260
CC37-019	2083257.14	748827.37	Surface Soil	0-0.5'	Radionuclides SVOCs	HPGe NA	Alpha Spec 8270
CC37-019	2083257.14	748827.37	Subsurface Soil	.5'-2.5'	Radionuclides SVOCs VOCs	HPGE NA 8260	8260 8270 8260
CC37-020	2083288.42	748845.19	Surface Soil	0-0.5'	Radionuclides SVOCs	HPGe NA	Alpha Spec 8270
CC37-020	2083288.42	748845.19	Subsurface Soil	.5'-2.5'	Radionuclides SVOCs VOCs	HPGE NA 8260	8260 8270 8260
CC37-021	2083319.71	748863.00	Surface Soil	0-0.5'	Radionuclides SVOCs	HPGe NA	Alpha Spec 8270
CC37-021	2083319.71	748863.00	Subsurface Soil	.5'-2.5'	Radionuclides SVOCs VOCs	HPGE NA 8260	8260 8270 8260
CC37-022	2083319.49	748827.00	Surface Soil	0-0.5'	Radionuclides SVOCs	HPGe NA	Alpha Spec 8270
CC37-022	2083319.49	748827.00	Subsurface Soil	.5'-2.5'	Radionuclides SVOCs VOCs	HPGE NA 8260	8260 8270 8260
CC38-001	2083195.64	748971.74	Surface Soil	0-0.5'	Radionuclides SVOCs	HPGe NA	Alpha Spec 8270
CC38-001	2083195.64	748971.74	Subsurface Soil	.5'-2.5'	Radionuclides SVOCs VOCs	HPGE NA 8260	8260 8270 8260

Location Code	Easting	Northing	Media	Depth Interval (ft)	Analyte	Onsite Laboratory Method	Offsite Laboratory Method
CC38-002	2083257.99	748971.37	Surface Soil	0-0.5'	Radionuclides SVOCs	HPGe NA	Alpha Spec 8270
CC38-002	2083257.99	748971.37	Subsurface Soil	.5'-2.5'	Radionuclides SVOCs VOCs	HPGE NA 8260	8260 8270 8260
CC38-003	2083320.35	748971.00	Surface Soil	0-0.5'	Radionuclides SVOCs	HPGe NA	Alpha Spec 8270
CC38-003	2083320.35	748971.00	Subsurface Soil	.5'-2.5'	Radionuclides SVOCs VOCs	HPGE NA 8260	8260 8270 8260

Table 2
Background Means Plus Two Standard Deviations or Method Detection Limits

IHSS Group	IHSS/PAC/UBC Site	Location Code	Analyte	Result	RL	Background Mean Plus Two Standard Deviations	Tier I AL	Tier II AL	Units
600-1	PAC 600-1001 – Temporary Waste Storage - Building 663	CB37-002	Benzo(a)anthracene	83	41	NA	614,000.00	6,140.00	ug/kg
			Benzo(a)pyrene	110	99	NA	61,400.00	614.00	ug/kg
			Benzo(k)fluoranthene	99	98	NA	6,140,000.00	61,400.00	ug/kg
			Chrysene	110	56	NA	61,400,000.00	614,000.00	ug/kg
			Fluoranthene	220	89	NA	76,800,000.00	76,800,000.00	ug/kg
			Indeno(1,2,3-cd)pyrene	75	51	NA	614,000.00	6,140.00	ug/kg
			Pyrene	200	42	NA	57,600,000.00	57,600,000.00	ug/kg
			Acenaphthene	110	49	NA	115,000,000.00	115,000,000.00	ug/kg
			Anthracene	130	83	NA	576,000,000.00	576,000,000.00	ug/kg
			Benzo(a)anthracene	380	42	NA	614,000.00	6,140.00	ug/kg
		CB37-003	Benzo(a)pyrene	410	100	NA	61,400.00	614.00	ug/kg
			Benzo(b)fluoranthene	350	110	NA	614,000.00	6,140.00	ug/kg
			Benzo(k)fluoranthene	390	99	NA	6,140,000.00	61,400.00	ug/kg
			Chrysene	430	57	NA	61,400,000.00	614,000.00	ug/kg
			Fluoranthene	1100	90	NA	76,800,000.00	76,800,000.00	ug/kg
		CB37-005	Indeno(1,2,3-cd)pyrene	240	51	NA	614,000.00	6,140.00	ug/kg
			Pyrene	810	43	NA	57,600,000.00	57,600,000.00	ug/kg
			Benzo(a)anthracene	66	40	NA	614,000.00	6,140.00	ug/kg
			Benzo(a)pyrene	100	96	NA	61,400.00	614.00	ug/kg
			Chrysene	85	54	NA	61,400,000.00	614,000.00	ug/kg
			Fluoranthene	140	86	NA	76,800,000.00	76,800,000.00	ug/kg
			Indeno(1,2,3-cd)pyrene	74	49	NA	614,000.00	6,140.00	ug/kg
			Pyrene	140	41	NA	57,600,000.00	57,600,000.00	ug/kg

IHSS Group	IHSS/PAC/UBC Site	Location Code	Analyte	Result	RL	Background Mean Plus Two Standard Deviations	Tier I AL	Tier II AL	Units
		CB37-006	Acenaphthene	54	47	NA	115,000,000.00	115,000,000.00	ug/kg
			Benzo(a)anthracene	230	40	NA	614,000.00	6,140.00	ug/kg
			Benzo(a)pyrene	250	96	NA	61,400.00	614.00	ug/kg
			Benzo(b)fluoranthene	210	100	NA	614,000.00	6,140.00	ug/kg
			Benzo(k)fluoranthene	220	95	NA	6,140,000.00	61,400.00	ug/kg
			Chrysene	250	55	NA	61,400,000.00	614,000.00	ug/kg
			Dibenz(a,h)anthracene	70	48	NA	61,400.00	614.00	ug/kg
			Fluoranthene	630	86	NA	76,800,000.00	76,800,000.00	ug/kg
			Indeno(1,2,3-cd)pyrene	150	49	NA	614,000.00	6,140.00	ug/kg
			Pyrene	500	41	NA	57,600,000.00	57,600,000.00	ug/kg
		CB37-009	Acenaphthene	100	48	NA	115,000,000.00	115,000,000.00	ug/kg
			Anthracene	170	82	NA	576,000,000.00	576,000,000.00	ug/kg
			Benzo(a)anthracene	400	41	NA	614,000.00	6,140.00	ug/kg
			Benzo(a)pyrene	400	99	NA	61,400.00	614.00	ug/kg
			Benzo(b)fluoranthene	330	100	NA	614,000.00	6,140.00	ug/kg
			Benzo(k)fluoranthene	350	98	NA	6,140,000.00	61,400.00	ug/kg
			Chrysene	430	56	NA	61,400,000.00	614,000.00	ug/kg
			Dibenz(a,h)anthracene	92	49	NA	61,400.00	614.00	ug/kg
			Fluoranthene	1200	88	NA	76,800,000.00	76,800,000.00	ug/kg
			Fluorene	81	80	NA	76,800,000.00	76,800,000.00	ug/kg
			Indeno(1,2,3-cd)pyrene	250	50	NA	614,000.00	6,140.00	ug/kg
		CB37-010	Pyrene	920	42	NA	57,600,000.00	57,600,000.00	ug/kg
			Benzo(a)anthracene	55	39	NA	614,000.00	6,140.00	ug/kg
			Chrysene	70	54	NA	61,400,000.00	614,000.00	ug/kg
			Fluoranthene	110	85	NA	76,800,000.00	76,800,000.00	ug/kg
			Pyrene	100	40	NA	57,600,000.00	57,600,000.00	ug/kg
			Benzo(a)anthracene	44	41	NA	614,000.00	6,140.00	ug/kg
			Fluoranthene	93	89	NA	76,800,000.00	76,800,000.00	ug/kg
		CB37-011	Benzo(a)anthracene	44	41	NA	614,000.00	6,140.00	ug/kg
			Fluoranthene	93	89	NA	76,800,000.00	76,800,000.00	ug/kg

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IHSS Group	IHSS/PAC/UBC Site	Location Code	Analyte	Result	RL	Background Mean Plus Two Standard Deviations	Tier I AL	Tier II AL	Units
			Pyrene	81	42	NA	57,600,000.00	57,600,000.00	ug/kg
		CB37-019	Acenaphthene	150	51	NA	115,000,000.00	115,000,000.00	ug/kg
			Anthracene	150	87	NA	576,000,000.00	576,000,000.00	ug/kg
			Benzo(a)anthracene	330	43	NA	614,000.00	6,140.00	ug/kg
			Benzo(a)pyrene	360	100	NA	61,400.00	614.00	ug/kg
			Benzo(b)fluoranthene	270	110	NA	614,000.00	6,140.00	ug/kg
			Benzo(k)fluoranthene	310	100	NA	6,140,000.00	61,400.00	ug/kg
			Chrysene	390	59	NA	61,400,000.00	614,000.00	ug/kg
			Dibenz(a,h)anthracene	120	52	NA	61,400.00	614.00	ug/kg
			Fluoranthene	920	94	NA	76,800,000.00	76,800,000.00	ug/kg
			Indeno(1,2,3-cd)pyrene	270	53	NA	614,000.00	6,140.00	ug/kg
			Pyrene	790	45	NA	57,600,000.00	57,600,000.00	ug/kg
		CB38-001	Benzo(a)anthracene	100	40	NA	614,000.00	6,140.00	ug/kg
			Benzo(a)pyrene	120	96	NA	61,400.00	614.00	ug/kg
			Benzo(b)fluoranthene	110	100	NA	614,000.00	6,140.00	ug/kg
			Chrysene	120	54	NA	61,400,000.00	614,000.00	ug/kg
			Fluoranthene	230	86	NA	76,800,000.00	76,800,000.00	ug/kg
			Indeno(1,2,3-cd)pyrene	92	49	NA	614,000.00	6,140.00	ug/kg
			Pyrene	210	41	NA	57,600,000.00	57,600,000.00	ug/kg
		CB38-002	2-Methylhaphthalene	19000	310	NA	76,800,000.00	76,800,000.00	ug/kg
			Anthracene	4800	410	NA	576,000,000.00	576,000,000.00	ug/kg
			Benzo(a)anthracene	5400	210	NA	614,000.00	6,140.00	ug/kg
			Benzo(a)pyrene	4500	500	NA	61,400.00	614.00	ug/kg
			Benzo(b)fluoranthene	2000	530	NA	614,000.00	6,140.00	ug/kg
			Benzo(k)fluoranthene	1200	490	NA	6,140,000.00	61,400.00	ug/kg
			Chrysene	9100	280	NA	61,400,000.00	614,000.00	ug/kg
			Dibenz(a,h)anthracene	1800	250	NA	61,400.00	614.00	ug/kg
			Indeno(1,2,3-cd)pyrene	1500	250	NA	614,000.00	6,140.00	ug/kg

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		CC37-001 CC37-003	Naphthalene	8900	370	NA	76,800,000.00	76,800,000.00	ug/kg
			Pyrene	12000	210	NA	57,600,000.00	57,600,000.00	ug/kg
			Bis(2-ethylhexyl)phthalate	250	73	NA	320,000.00	320,000.00	ug/kg
			Acenaphthene	75	49	NA	115,000,000.00	115,000,000.00	ug/kg
			Benzo(a)anthracene	190	42	NA	614,000.00	6,140.00	ug/kg
			Benzo(a)pyrene	200	100	NA	61,400.00	614.00	ug/kg
			Benzo(b)fluoranthene	150	110	NA	614,000.00	6,140.00	ug/kg
			Benzo(k)fluoranthene	180	99	NA	6,140,000.00	61,400.00	ug/kg
			Chrysene	220	57	NA	61,400,000.00	614,000.00	ug/kg
			Fluoranthene	520	89	NA	76,800,000.00	76,800,000.00	ug/kg
			Indeno(1,2,3-cd)pyrene	130	51	NA	614,000.00	6,140.00	ug/kg
			Pyrene	460	43	NA	57,600,000.00	57,600,000.00	ug/kg
			Benzoic acid	1100	370	NA	1,000,000,000.00	1,000,000,000.00	ug/kg
			Acenaphthene	320	50	NA	115,000,000.00	115,000,000.00	ug/kg
			Anthracene	480	84	NA	576,000,000.00	576,000,000.00	ug/kg
			Benzo(a)anthracene	860	42	NA	614,000.00	6,140.00	ug/kg
			Benzo(a)pyrene	740	100	NA	61,400.00	614.00	ug/kg
			Benzo(b)fluoranthene	590	110	NA	614,000.00	6,140.00	ug/kg
		CC37-004 CC37-006	Benzo(k)fluoranthene	710	100	NA	6,140,000.00	61,400.00	ug/kg
			Bis(2-ethylhexyl)phthalate	150	74	NA	320,000,000.00	320,000.00	ug/kg
			Chrysene	920	57	NA	61,400,000.00	614,000.00	ug/kg
			Fluoranthene	2600	90	NA	76,800,000.00	76,800,000.00	ug/kg
			Fluorene	270	82	NA	76,800,000.00	76,800,000.00	ug/kg
			Indeno(1,2,3-cd)pyrene	450	52	NA	614,000.00	6,140.00	ug/kg
			Pyrene	2100	43	NA	57,600,000.00	57,600,000.00	ug/kg
			Benzo(a)anthracene	150	40	NA	614,000.00	6,140.00	ug/kg
			Benzo(a)pyrene	180	97	NA	61,400.00	614.00	ug/kg
			Benzo(b)fluoranthene	130	100	NA	614,000.00	6,140.00	ug/kg

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IHSS Group	IHSS/PAC/UBC Site	Location Code	Analyte	Result	RL	Background Mean Plus Two Standard Deviations	Tier I AL	Tier II AL	Units
			Benzo(k)fluoranthene	160	96	NA	6,140,000.00	61,400.00	ug/kg
			Chrysene	180	55	NA	61,400,000.00	614,000.00	ug/kg
			Fluoranthene	390	86	NA	76,800,000.00	76,800,000.00	ug/kg
			Indeno(1,2,3-cd)pyrene	120	49	NA	614,000.00	6,140.00	ug/kg
		CC37-009	Pyrene	360	41	NA	57,600,000.00	57,600,000.00	ug/kg
			Pyrene	77	42	NA	57,600,000.00	57,600,000.00	ug/kg
		CC37-012	Benzo(a)anthracene	130	47	NA	614,000.00	6,140.00	ug/kg
			Benzo(a)pyrene	150	61	NA	61,400.00	614.00	ug/kg
			Benzo(b)fluoranthene	130	76	NA	614,000.00	6,140.00	ug/kg
			Benzo(k)fluoranthene	130	82	NA	6,140,000.00	61,400.00	ug/kg
			Chrysene	150	41	NA	61,400,000.00	614,000.00	ug/kg
			Fluoranthene	370	47	NA	76,800,000.00	76,800,000.00	ug/kg
		CC37-014	Indeno(1,2,3-cd)pyrene	94	53	NA	614,000.00	6,140.00	ug/kg
			Pyrene	340	67	NA	57,600,000.00	57,600,000.00	ug/kg
			Bis(2-ethylhexyl)phthalate	140	82	NA	32,000,000.00	320,000.00	ug/kg
			Butyl benzylphthalate	310	75	NA	384,000,000.00	384,000,000.00	ug/kg
		CC37-016	Chrysene	41	40	NA	61,400,000.00	614,000.00	ug/kg
			Fluoranthene	72	46	NA	76,800,000.00	76,800,000.00	ug/kg
			Pyrene	73	65	NA	57,600,000.00	57,600,000.00	ug/kg
			2-Methylnaphthalene	130	41	NA	76,800,000.00	76,800,000.00	ug/kg
			Acenaphthene	590	52	NA	115,000,000.00	115,000,000.00	ug/kg
			Anthracene	630	75	NA	576,000,000.00	576,000,000.00	ug/kg
			Benzo(a)anthracene	1100	45	NA	614,000.00	6,140.00	ug/kg
			Benzo(a)pyrene	1200	59	NA	61,400.00	614.00	ug/kg
		CC37-016	Benzo(b)fluoranthene	950	73	NA	614,000.00	6,140.00	ug/kg
			Benzo(k)fluoranthene	1100	79	NA	6,140,000.00	61,400.00	ug/kg
			Chrysene	1200	39	NA	61,400,000.00	614,000.00	ug/kg

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IHSS Group	IHSS/PAC/UBC Site	Location Code	Analyte	Result	RL	Background Mean Plus Two Standard Deviations	Tier I AL	Tier II AL	Units
			Dibenz(a,h)anthracene	340	72	NA	61,400.00	614.00	ug/kg
			Dibenzofuran	220	58	NA	7,680,000.00	7,680,000.00	ug/kg
			Fluoranthene	3000	45	NA	76,800,000.00	76,800,000.00	ug/kg
			Fluorene	430	63	NA	76,800,000.00	76,800,000.00	ug/kg
			Indeno(1,2,3-cd)pyrene	780	51	NA	614,000.00	6,140.00	ug/kg
			Naphthalene	380	49	NA	76,800,000.00	76,800,000.00	ug/kg
			Pentachlorophenol	410	74	NA	14,900,000.00	37,400.00	ug/kg
			Pyrene	2600	65	NA	57,600,000.00	57,600,000.00	ug/kg
			Benzo(a)anthracene	58	41	NA	614,000.00	6,140.00	ug/kg
			Chrysene	65	56	NA	61,400,000.00	614,000.00	ug/kg
		CC37-018	Fluoranthene	150	88	NA	76,800,000.00	76,800,000.00	ug/kg
			Pyrene	100	42	NA	57,600,000.00	57,600,000.00	ug/kg
			Pyrene	100	41	NA	57,600,000.00	57,600,000.00	ug/kg
			Butyl benzyl phthalate	310	70	NA	384,000,000.00	384,000,000.00	ug/kg
		CC37-020	Benzo(a)anthracene	150	41	NA	614,000.00	6,140.00	ug/kg
			Benzo(a)pyrene	170	99	NA	61,400.00	614.00	ug/kg
			Benzo(b)fluoranthene	140	110	NA	614,000.00	6,140.00	ug/kg
			Benzo(k)fluoranthene	150	98	NA	6,140,000.00	61,400.00	ug/kg
		CC37-024	Chrysene	190	56	NA	61,400,000.00	614,000.00	ug/kg
			Fluoranthene	370	89	NA	76,800,000.00	76,800,000.00	ug/kg
			Indeno(1,2,3-cd)pyrene	120	51	NA	614,000.00	6,140.00	ug/kg
			Pyrene	360	42	NA	57,600,000.00	57,600,000.00	ug/kg
		CC38-001	Acetone	5.256427	130	NA	27,200,000.00	272,000.00	ug/kg
			Benzo(a)anthracene	55	41	NA	614,000.00	6,140.00	ug/kg
			Chrysene	70	55	NA	61,400,000.00	614,000.00	ug/kg
			Fluoranthene	140	87	NA	76,800,000.00	76,800,000.00	ug/kg
		CC38-002	Pyrene	140	42	NA	57,600,000.00	57,600,000.00	ug/kg
			Americium-241	720	4	NA	215.00	38.00	ug/kg
		TBD							

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		TBD	Plutonium-239/240	3600	0	NA	1,430.00	252.00	ug/kg
		CB37-006	Benzene	230		NA	1,410.00	14.10	ug/kg
			Benzo(a)anthracene	49	46	NA	160,000.00	1,600.00	ug/kg
			Fluoranthene	120	98	NA	537,000,000.00	5,370,000.00	ug/kg
			Pyrene	94	47	NA	397,000,000.00	3,970,000.00	ug/kg
		CB37-013	Benzo(a)anthracene	64	45	NA	160,000.00	1,600.00	ug/kg
			Bis(2-ethylhexyl)phthalate	300	80	NA	311,000,000.00	3,110,000.00	ug/kg
			Chrysene	81	62	NA	16,000,000.00	160,000.00	ug/kg
			Fluoranthene	160	97	NA	537,000,000.00	5,370,000.00	ug/kg
			Pyrene	140	46	NA	397,000,000.00	3,970,000.00	ug/kg
		CC37-004	Anthracene	220	70	NA	1,000,000,000.00	11,200.00	ug/kg
			Fluoranthene	230	42	NA	537,000,000.00	5,370,000.00	ug/kg
			Pyrene	220	61	NA	397,000,000.00	3,970,000.00	ug/kg
			Tetrachloroethene	1.118467	6.1	NA	3,150.00	31.50	ug/kg
			Toluene	0.835778	6.1	NA	707,000.00	7,070.00	ug/kg
		CC37-007	Tetrachloroethene	1.084334	6	NA	3,150.00	31.50	ug/kg
			Toluene	1.060238	6	NA	707,000.00	7,070.00	ug/kg
		CC37-009	Toluene	0.60982	5.3	NA	707,000.00	7,070.00	ug/kg
		CC37-014	Methylene chloride	1.9	0.92	NA	578.00	5.78	ug/kg
		CC37-021	Pyrene	44	44	NA	397,000,000.00	3,970,000.00	ug/kg
			Benzo(a)anthracene	52	48	NA	160,000.00	1,600.00	ug/kg
			Chrysene	130	66	NA	16,000,000.00	160,000.00	ug/kg
			Pyrene	77	49	NA	397,000,000.00	3,970,000.00	ug/kg
		CC37-022	Chrysene	93	60	NA	16,000,000.00	160,000.00	ug/kg
		CC37-022	Acetone	19.74799	110	NA	27,200,000.00	272,000.00	ug/kg
		CC37-023	Methylene chloride	1.8	0.87	NA	578.00	5.78	ug/kg
		CC37-024	Methylene chloride	2.1	0.96	NA	578.00	5.78	ug/kg

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Table 3
Surface Soil RFCA Tier I and Tier II Sum of Ratios

Location	Easting	Northing	Tier I SOR	Tier II SOR
CB38-001	2083071	748972.5	0.00	0.24
CB37-003	2083070	748900.4	0.01	0.83
CB37-004	2083102	748918.4	NA	NA
CB37-002	2083102	748954.3	0.00	0.21
CB38-002	2083133	748972.2	0.12	11.75
CB37-005	2083133	748936	0.00	0.19
CC37-001	2083164	748954	0.00	0.00
CC38-001	2083196	748971.7	0.00	0.35
CC37-003	2083195	748935.7	0.00	0.41
CC37-006	2083195	748899.7	0.02	1.53
CC37-008	2083258	748935.4	0.00	0.36
CB37-019	2083257	748827.3	0.01	0.93
CC38-002	2083258	748971.4	0.00	0.01
CB37-009	2083070	748828.4	0.01	0.97
CB37-011	2083133	748864.1	0.00	0.01
CB37-006	2083070	748864.4	0.01	0.62
CC38-003	2083320	748970.9	NA	NA
CC37-009	2083289	748953.2	0.00	0.00
CC37-018	2083289	748881.1	0.00	0.01
CC37-020	2083288	748845.3	0.00	0.00
CB37-010	2083101	748846.3	0.00	0.01
CC37-024	2083320	748935	0.00	0.00
CC37-014	2083289	748917.2	0.00	0.00
CC37-004	2083101.79	748918.30	0.00	0.00
CC37-007	2083101.58	748882.30	NA	NA
CC37-012	2083132.43	748828.11	0.00	0.30
CC37-016	2083226	748845.5	0.03	3.00
TBD	2083245	748862.3	5.87	33.23

2.3 Planned Accelerated Action Description

Accelerated action activities are described below.

2.3.1 Accelerated Action Objectives

Accelerated action objectives were developed and described in ER RSOP Notification #02-04 (DOE 2002b). The accelerated action objectives for IHSS Group 600-1 included the following:

- Remove the concrete slabs (if not removed by Remediation, Industrial Decontamination and Decommissioning [D&D], & Site Services [RISS] Facility D&D) and recycle in accordance with the RSOP for Recycling Concrete (DOE 1999), or dispose of offsite;
- Remove sanitary sewer drains (if not removed by RISS Facility D&D);

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- Remove structures and piping within 3 feet of current grade (if not removed by RISS Facility D&D);
- Remove soil with contaminant concentrations above RFCA Tier I ALs ;
- Remove contaminated soil to below RFCA Tier I ALs if indicated through the stewardship evaluation (Section 2.4); and
- Collect confirmation samples in accordance with the Industrial Area Sampling and Analysis Plan (IASAP) (DOE 2001).

Remediation activities were conducted between July 18, 2002 and October 10, 2002. Start and end dates of significant activities are listed in Table 4

Table 4
Dates of Accelerated Action Activities

Activity	Start Date	End Date	Duration
Characterization Sampling	August 5, 2002	September 20, 2002	46 Days
Removal Activities	July 18, 2002	October 10, 2002	85 Days
Confirmation Sampling	September 16, 2002	October 10, 2002	24 Days
Backfill Excavations	October 10, 2002	October 10, 2002	1 Day

Photographs of site activities are provided in Appendix A.

2.3.2 Removal Activities

ER RSOP Notification #02-04 accelerated action project objectives for IHSS Group 600-1 were achieved through the following:

- The Buildings 662 and 663 and several other concrete slabs were removed;
- Sanitary sewer drains, electrical conduit and other utility components, and a presumed septic system were removed;
- Soil with contaminant concentrations greater than RFCA Tier I ALs was removed; and
- Confirmation samples were collected in accordance with the IASAP (DOE 2001).

These removal activities are described below.

Remove Concrete Slabs and Soil

The Building 662 and Building 663 concrete slabs as well as two slabs east of IHSS Group 600-1 and several small slabs west of Building 663 were removed. The east slabs were broken up using a hydraulic hammer and the concrete was recycled in accordance with the RSOP for Recycling Concrete (DOE 1999). The Building 662 slab and footers were broken up using a hydraulic hammer. The concrete slab pieces were turned over and surveyed to determine if radionuclide contamination was present. The Building 662 concrete was disposed of offsite at

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the Erie Landfill. The Building 663 slab was saw cut into approximately 4 foot by 6 foot sections and the bottom of the slab was surveyed. Concrete disposal is described in Section 2.6.

During Building 663 slab removal, a southwest/northeast trending crack was discovered in the southeastern corner of the slab. Radiological surveys of the crack indicated surface contamination. This portion of the slab was turned over and surveyed, surveys indicated that the bottom of the slab and the soil beneath the slab were contaminated. Measurements showed 224,000 disintegrations per minute (dpm) fixed alpha contamination and 3,196 dpm removable alpha contamination. A fixative was applied to the contaminated area to prevent the spread of contamination. The soil beneath the crack was sampled, the fixative applied, and the area covered with plastic. Soil analytical results indicated that americium was present at an activity of 720 picocuries per gram (pCi/g) and plutonium was present at an activity of 3,600 pCi/g.

Soil at this location was excavated to a depth of 4.5 feet over an approximately 20 feet by 30 feet and in-process samples were collected and analyzed. The results of the in-process analyses are listed in Table 5. Confirmation samples were collected at this location after accelerated action objectives were achieved. The excavated area is shown on Figure 5.

Removal of Structures and Piping

All structures and piping beneath Building 662 and Building 663 slabs were removed. A sanitary drain with rusted base was removed from beneath Building 662 however, there were no additional pipes associated with this drain. Electrical conduit and wires were removed from beneath the Building 662 slab and a series of electrical utilities adjacent to Building 663 were removed. The presumed septic system beneath the western east slab was located and removed.

2.4 Confirmation Sampling Data

Confirmation sampling and analysis was conducted, after excavation of contaminated soil and before backfilling, to verify accelerated action goals. Confirmation sampling locations were developed as part of the consultative process. Confirmation sampling locations and results greater than background means and two standard deviations or reporting limits are shown on Figure 8 and in Table 6. Confirmation sampling results indicate that all contaminant concentrations are less than RFCA Tier II ALs. The complete data set is in Appendix B.

Confirmation sampling location SOR calculations were based on radionuclides (americium-241, plutonium-239/240, uranium-234, uranium-235, and uranium-238). Plutonium, americium, and uranium were grouped together for radionuclide SOR calculations. Tier II SOR calculations for radionuclides are less than the threshold value of 1 at all confirmation sampling locations. The RFCA Tier II SOR is 0.02713 at location CC37-CC04 and is 0.139173 at location CC37-CC06.

2.5 Deviations from the ER RSOP

Subsurface soil samples were collected in the excavation area. Based on the consultative process, subsurface soil samples in other areas were not collected. Table 7 lists planned versus actual sampling locations.

2.6 Waste Management

Waste from the IHSS Group 600-1 accelerated action consisted of concrete, soil, and electrical debris. Clean concrete was segregated and recycled in accordance with the RSOP for Concrete Recycling (DOE 1999a) or sent to the Erie Landfill. Contaminated concrete was loaded into

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Table 5

**In-Process Sampling Results Greater Than Background Means Plus Two Standard Deviations or Method Detection Limits
Hot Spot Soil Removal**

Location Code	Analyte	Depth Start (feet)	Depth End (feet)	Result	RL	Background Mean Plus Two Standard Deviations	Tier I AL	Tier II AL	Units
663 H.S. CONF. #2	Americium-241	2	2.2	9.9	4	0.02	209.00	38.00	pCi/g
663 H.S. CONF. #1	Americium-241	2	2.2	190	4	0.02	209.00	38.00	pCi/g
CC37-CC01	Barium	3	3	515	150	289.38	133,000.00	133,000.00	mg/kg
	Copper	3	3	56.7	300	38.21	71,100.00	71,100.00	mg/kg
	Nickel	3	3	63.5	60	62.21	38,400.00	38,400.00	mg/kg
	Arsenic	3	3	13.4	25	13.14	299.00	2.99	mg/kg
CC37-CC02	Barium	3	3	465	150	289.38	133,000.00	133,000.00	mg/kg
	Copper	3	3	50.9	300	38.21	71,100.00	71,100.00	mg/kg
	Americium-241	3	3	240	4	0.02	209.00	38.00	pCi/g
	Plutonium-239/240	4.5	4.5	3.9		0.02	1,090.00	252.00	pCi/g
CC37-CC04	Americium-241	4.5	4.5	0.497		0.02	209.00	38.00	pCi/g
	Plutonium-239/240	4.5	4.5	17.1		0.02	1,090.00	252.00	pCi/g
	Americium-241	4.5	4.5	2.71		0.02	209.00	38.00	pCi/g
	Americium-241	4.5	4.5	5.4		4.00	209.00	38.00	pCi/g

Table 6
Confirmation Sampling Results
Hot Spot Soil Removal

Location Code	Easting	Northing	Analyte	Depth (feet)	Result	RL	Background Mean Plus Two Standard Deviations	Tier I AL	Tier II AL	Units
CC37-CC04	2083241.548	748862.089	Americium-241	4.5	0.473	0.188	0.02	209.00	38.00	pCi/g
			Plutonium-239/240		3.70	0.118	0.02	1,090.00	252.00	pCi/g
			Uranium-234		0.464	0.110	2.64	1,738.00	307.00	pCi/g
			Uranium-235		ND	0.125	0.12	113.00	24.00	pCi/g
			Uranium -238		0.625	0.110	1.49	506.00	103.00	pCi/g
CC37-CC06	2083241.321	748860.621	Americium-241	4.5	2.71	0.281	0.02	209.00	38.00	pCi/g
			Plutonium-239/240		17.1	0.0814	0.02	1,090.00	252.00	pCi/g
			Uranium-234		0.267	0.125	2.64	1,738.00	307.00	pCi/g
			Uranium-235		ND	0.158	0.12	113.00	24.00	pCi/g
			Uranium -238		0.525	0.169	1.49	506.00	103.00	pCi/g

Table 7
Planned versus Actual Sampling

Location Code	Planned Easting	Planned Northing	Actual Easting	Actual Northing	Media	Depth Interval (ft)	Analyte	Comments
CB37-001	2083070.72	748936.48	2083070.703	748936.5	Surface Soil	0-0.5'	Radionuclides SVOCs	No significant change
CB37-002	2083102.00	748954.29	2083101.927	748954.3	Surface Soil	0-0.5'	Radionuclides SVOCs	No significant change
CB37-003	2083070.51	748900.48	2083070.45	748900.4	Surface Soil	0-0.5'	Radionuclides SVOCs	No significant change
CB37-004	2083101.79	748918.30	2083101.798	748918.4	Surface Soil	0-0.5'	Radionuclides SVOCs	No significant change
CB37-005	2083133.07	748936.11	2083132.953	748936.1	Surface Soil	0-0.5'	Radionuclides SVOCs	No significant change
CB37-006	2083070.29	748864.48	2083070.267	748864.4	Surface Soil	0-0.5'	Radionuclides SVOCs	No significant change
CB37-007	2083101.58	748882.30	2083101.543	748882.3	Surface Soil	0-0.5'	Radionuclides SVOCs	No significant change
CB37-008	2083132.86	748900.11	2083132.884	748900.1	Surface Soil	0-0.5'	Radionuclides SVOCs	No significant change
CB37-009	2083070.08	748828.48	2083070.063	748828.4	Surface Soil	0-0.5'	Radionuclides SVOCs	No significant change
CB37-010	2083101.36	748846.30	2083101.36	748846.3	Surface Soil	0-0.5'	Radionuclides SVOCs	No significant change
CB37-011	2083132.65	748864.11	2083132.534	748864.1	Surface Soil	0-0.5'	Radionuclides SVOCs	No significant change
CB37-A012	2083132.43	748828.11	2083132.416	748828.2	Surface Soil	0-0.5'	Radionuclides SVOCs	No significant change
CB38-001	2083070.94	748972.48	2083070.887	748972.5	Surface Soil	0-0.5'	Radionuclides SVOCs	No significant change
CB38-002	2083133.29	748972.11	2083133.285	748972.2	Surface Soil	0-0.5'	Radionuclides SVOCs	No significant change
CC37-001	2083164.36	748953.92	2083164.421	748954	Surface Soil	0-0.5'	Radionuclides SVOCs	No significant change
CC37-002	2083164.14	748917.93	2083164.257	748917.9	Surface Soil	0-0.5'	Radionuclides SVOCs	No significant change
CC37-003	2083195.43	748935.74	2083195.43	748935.7	Surface Soil	0-0.5'	Radionuclides SVOCs	No significant change
CC37-004	2083226.71	748953.56	2083101.79	748953.56	Surface Soil	0-0.5'	Radionuclides SVOCs	No significant change
CC37-A005	2083163.93	748881.93	2083163.904	748882	Surface Soil	0-0.5'	Radionuclides SVOCs	No significant change
CC37-006	2083195.21	748899.74	2083195.169	748899.7	Surface Soil	0-0.5'	Radionuclides SVOCs	No significant change

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Location Code	Planned Easting	Planned Northing	Actual Easting	Actual Northing	Media	Depth Interval (ft)	Analyte	Comments
CC37-A007	2083226.50	748917.56	2083226.5	748917.56	Surface Soil	0-0.5'	Radionuclides SVOCs	No significant change
CC37-A008	2083257.78	748935.37	2083257.847	748935.4	Surface Soil	0-0.5'	Radionuclides SVOCs	No significant change
CC37-A009	2083289.06	748953.19	2083289.107	748953.2	Surface Soil	0-0.5'	Radionuclides SVOCs	No significant change
CC37-A010	2083163.72	748845.93	2083163.717	748845.9	Surface Soil	0-0.5'	Radionuclides SVOCs	No significant change
CC37-011	2083195.00	748863.74	2083194.969	748863.7	Surface Soil	0-0.5'	Radionuclides SVOCs	No significant change
CC37-012	2083226.28	748881.56	2083226.28	748881.56	Surface Soil	0-0.5'	Radionuclides SVOCs	No significant change
CC37-013	2083257.57	748899.37	2083257.501	748899.422	Surface Soil	0-0.5'	Radionuclides SVOCs	No significant change
CC37-014	2083288.85	748917.19	2083288.85	748917.2	Surface Soil	0-0.5'	Radionuclides SVOCs	No significant change
CC37-015	2083194.79	748827.74	2083194.735	748827.8	Surface Soil	0-0.5'	Radionuclides SVOCs	No significant change
CC37-016	2083226.07	748845.56	2083226.004	748845.5	Surface Soil	0-0.5'	Radionuclides SVOCs	No significant change
CC37-017	2083257.35	748863.37	2083257.35	748863.37	Surface Soil	0-0.5'	Radionuclides SVOCs	No significant change
CC37-018	2083288.64	748881.19	2083289	748881.1	Surface Soil	0-0.5'	Radionuclides SVOCs	No significant change
CC37-019	2083257.14	748827.37	2083257.107	748827.311	Surface Soil	0-0.5'	Radionuclides SVOCs	No significant change
CC37-020	2083288.42	748845.19	2083288	748845.3	Surface Soil	0-0.5'	Radionuclides SVOCs	No significant change
CC37-021	2083319.71	748863.00	2083320	748863	Surface Soil	0-0.5'	Radionuclides SVOCs	No significant change
CC37-022	2083319.49	748827.00	2083325	748821.7	Surface Soil	0-0.5'	Radionuclides SVOCs	No significant change
CC37-023			2083319	748899	Surface Soil	0-0.5'	Radionuclides SVOCs	Not in original sampling plan, additional sample required
CC37-024			2083320	748935	Surface Soil	0-0.5'	Radionuclides SVOCs	Not in original sampling plan, additional sample required.
CC37-CC01			2083244	748860.6	Subsurface Soil	3'	Radionuclides Metals	Confirmation Sample
CC37-CC02			2083240	748860.8	Subsurface Soil	3'	Radionuclides Metals	Confirmation Sample
CC38-001	2083195.64	748971.74	2083196	748971.7	Surface Soil	0-0.5'	Radionuclides SVOCs	No significant change
CC38-002	2083257.99	748971.37	2083258	748971.4	Surface Soil	0-0.5'	Radionuclides SVOCs	No significant change

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Location Code	Planned Easting	Planned Northing	Actual Easting	Actual Northing	Media	Depth Interval (ft)	Analyte	Comments
CC38-003	2083320.35	748971.00	2083320	748970.9	Surface Soil	0-0.5'	Radionuclides SVOCs	No significant change
CC38-003	2083320.35	748971.00	2083320	748970.9	Subsurface Soil	5'-2.5'	Radionuclides SVOCs VOCs	No significant change
Most Elevated Spot			2083245	748862.3	Subsurface Soil	0'-1'	Radionuclides Metals VOCs	Not in original plan – In process sample
Soil that had been moved from most elevated spot			2083224	748852.6	Subsurface Soil	0'-1'	Radionuclides Metals VOCs	Not in original plan – In process sample
TBD			2083245	748862.3	Surface Soil	0'-0.5'	Radionuclides	Not in original plan sample beneath concrete
663 Hot Spot. Confirmation 1			2083245	748862.3	Subsurface Soil	0'-1.33'	SVOC	Not in original plan – In-process sample
663 Hot Spot Confirmation 2			2083224	748852.6	Subsurface Soil	0'-1'	SVOC	Not in original plan – In-process sample

metal waste boxes for disposal as low-level waste. Electrical debris was placed in metal waste containers for disposal as low-level waste. Approximately 23,120 cubic feet (cu ft) of low level waste (LLW), 7,803 cu ft of sanitary waste, and 11,194.76 cu ft of recycled concrete were generated during this accelerated action. Waste types, volumes, and disposition are presented in Table 8.

Excavated soil was temporarily stockpiled near the excavations. Samples were collected from the soil stockpiles to determine the final disposition of the excavated soil.

2.7 Site Reclamation

All excavated areas were backfilled after confirmation sampling results were received and discussed with regulatory agencies through the consultative process. Clean backfill from adjacent clean areas was used. Reseeding at IHSS Group 600-1 will be delayed because of current drought conditions.

2.8 Accelerated Action Goals

ER RSOP Notification #02-04 accelerated action project objectives were achieved through the following:

- Removal of concrete slabs and associated structures; and
- Removal of all soil with contaminant concentrations greater than RFCA Tier I ALs.

Removal activities were consistent with and contributed to the ER RSOP overall long-term remedial action objectives (RAOs) for RFETS soil. This contribution is described below.

RAO 1: Provide a remedy consistent with the RFETS goal of protection of human health and the environment. Removal of concrete slabs, all structures, and all soil with contaminant concentrations greater than RFCA Tier I ALs contributed to the protection of human health and the environment because potential sources of contamination were removed.

RAO 2: Provide a remedy that minimizes the need for long-term maintenance and institutional or engineering controls. Removal of concrete slabs, all structures, and all soil with contaminant concentrations greater than RFCA Tier I ALs minimizes the need for long-term maintenance and institutional or engineering controls because potential sources of contamination were removed.

RAO 3: Minimize the spread of contaminants during implementation of accelerated actions. Best management practices were used to prevent the spread of contaminants during the accelerated action. Air monitoring data during the accelerated action did not indicate any exceedances.

3.0 POST-REMEDICATION CONDITIONS

Residual contaminant concentrations, consisting of characterization and confirmation sampling locations, and backfill greater than background plus two standard deviations or

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Table 8
Waste Characterization Summary

Container Number	Extended Number	Container Type	Volume (cu.ft.)	Waste Type	Gross Weight (lbs)	Status	IDC	Waste Codes	Disposition
X30490	662300001	CST	1190	LLW	NA	Foamed and sealed	5001	NA	Transferred to Material Stewardship
X30491	662300002	CST	1190	LLW	NA	Foamed and sealed	5001	NA	Transferred to Material Stewardship
X30476	662300003	CST	1190	LLW	NA	Foamed and sealed	5001	NA	Transferred to Material Stewardship
X30482	662300004	CST	1190	LLW	NA	Foamed and sealed	5001	NA	Transferred to Material Stewardship
X30399	662300005	CST	1190	LLW	NA	Foamed and sealed	5001	NA	Transferred to Material Stewardship
X30477	662300006	CST	1190	LLW	NA	Foamed and sealed	5001	NA	Transferred to Material Stewardship
X30417	662300019	CST	1190	LLW	NA	Foamed and sealed	5001	NA	Transferred to Material Stewardship
X30418	662300020	CST	1190	LLW	NA	Foamed and sealed	5001	NA	Transferred to Material Stewardship
X30386	662300015	CST	1190	LLW	NA	Foamed and sealed	5001	NA	Transferred to Material Stewardship
X30416	662300018	CST	1190	LLW	NA	Foamed and sealed	5001	NA	Transferred to Material Stewardship
X30415	662300017	CST	1190	LLW	NA	Foamed and sealed	5001	NA	Transferred to Material Stewardship
X30387	662300016	CST	1190	LLW	NA	Full and sealed	5001	NA	Transferred to Material Stewardship

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Container Number	Extended Number	Container Type	Volume (cu.ft.)	Waste Type	Gross Weight (lbs)	Status	IDC	Waste Codes	Disposition
X30398	662300022	CST	1190	LLW	NA	Full and sealed	5001	NA	Transferred to Material Stewardship
X30478	662300023	CST	1190	LLW	NA	Sealed	5001	NA	Transferred to Material Stewardship
X30597	662300025	CST	1190	LLW	NA	Foamed and sealed	5001	NA	Transferred to Material Stewardship
X30596	662300024	CST	1190	LLW	NA	Foamed and sealed	5001	NA	Transferred to Material Stewardship
X30412	662300027	CST	1190	LLW	NA	Sealed	5001	NA	Transferred to Material Stewardship
X30413	662300028	CST	1190	LLW	NA	Sealed	5001	NA	Transferred to Material Stewardship
L00869	662300033	L88	264	LLW	NA	Sealed	323	NA	Transferred to Material Stewardship
B03967 crate 2	662300007	IP2	106	LLW	5800	Closed and weighed	0323	NA	Transferred to Material Stewardship
B03969 crate 3	662300008	IP2	106	LLW	5960	Closed and weighed	0323	NA	Transferred to Material Stewardship
B03970 crate 1	662300009	IP2	106	LLW	5460	Closed and weighed	0323	NA	Transferred to Material Stewardship
B03962 crate 7	662300010	IP2	106	LLW	5760	Closed and weighed	0323	NA	Transferred to Material Stewardship
B03968 crate 6	662300011	IP2	106	LLW	5740	Closed and weighed	0323	NA	Transferred to Material Stewardship
B03904 crate 5	662300012	IP2	106	LLW	5760	Closed and weighed	0323	NA	Transferred to Material Stewardship

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Container Number	Extended Number	Container Type	Volume (cu.ft.)	Waste Type	Gross Weight (lbs)	Status	IDC	Waste Codes	Disposition
B03903 crate 4	662300013	IP2	106	LLW	5620	Closed and weighed	0323	NA	Transferred to Material Stewardship
B03901 crate 8	662300014	IP2	106	LLW	4780	Closed and weighed	0323	NA	Transferred to Material Stewardship
B03965	662300029	IP2	106	LLW	5380	Closed and weighed	0323	NA	Transferred to Material Stewardship
B03966	662300030	IP2	106	LLW	5740	Closed and weighed	0323	NA	Transferred to Material Stewardship
B03902	662300031	IP2	106	LLW	5800	Closed and weighed	0323	NA	Transferred to Material Stewardship
B02231	662300032	ST90	90	LLW	5420	Closed and weighed	0323	NA	Transferred to Material Stewardship
B03143	622300034	ST90	90	LLW	1220	Closed and weighed	0323	NA	Transferred to Material Stewardship
B03144	622300035	ST90	90	LLW	2240	Closed and weighed	0323	NA	Transferred to Material Stewardship

MDLs at IHSS Group 600-1 are presented in Table 9 and shown on Figure 7. Additional removal actions beyond ER RSOP Notification # 02-04 accelerated action goals for IHSS Group 600-1 (DOE 2002b) were not required because of the following:

- Residual radionuclide activities in subsurface soil were less than RFCA Tier II ALs and only slightly greater than background plus two standard deviations.
- Radionuclide activities in surface soil were less than Tier II ALs and only slightly greater than background plus two standard deviations.

4.0 STEWARDSHIP EVALUATION

The IHSS Group 600-1 stewardship evaluation was conducted through ongoing consultation with the regulatory agencies. The regulatory agencies were informed through frequent project updates, e-mail, telephone contact, and personal contact throughout the project duration. Copies of these documents are in Appendix C.

4.1.1 Current Site Conditions

As discussed in Section 2.0, the accelerated action at IHSS Group 600-1 consisted of removal of slabs, footers, utilities less than 3 feet below grade, and soil with americium and plutonium activities greater than Tier I ALs. Section 3.0 presents residual contamination information

The following conditions currently exist at IHSS Group 600-1:

- The potential source of contamination that had existed at IHSS Group 600-1 (i.e., the hot spot in the southeastern portion of Building 663) was removed;
- Surface soil contaminant concentrations greater than background means plus two standard deviations or MDLs includes SVOCs in the eastern portion of the IHSS Group, around former Building 663, and in the western portion of the IHSS Group.
- Subsurface soil contaminant concentrations greater than background means plus two standard deviations or MDLs includes radionuclides in the southeastern portion of former Building 663 at 4.5 feet depth.

4.1.2 Near Term Management Recommendations

The accelerated action for IHSS Group 600-1 met the accelerated action. Contaminant concentrations in soil remaining at IHSS Group 600-1 do not trigger any further accelerated action. Potential contaminant sources and pathways have been removed, mitigated, or found not to have existed. Excavation at the site will continue to be controlled through the Site soil disturbance permit process. Fencing and signs restricting access will be posted to minimize disturbance to newly revegetated areas. Site access and security controls and the soil disturbance permit process will remain in place pending the implementation of long-term controls. No other near-term management techniques are required because of environmental conditions.

Table 9
Residual Contamination at IHSS Group 600-1

IHSS Group	IHSS/PAC/UBC Site	Location Code	Analyte	Result	RL	Background Plus Two Standard Deviations	Tier I AL	Tier II AL	Units
6-001	PAC 600-1001 – Temporary Waste Storage - Building 663	CB37-002	Benzo(a)anthracene	83	41	NA	614,000.00	6,140.00	ug/kg
			Benzo(a)pyrene	110	99	NA	61,400.00	614.00	ug/kg
			Benzo(k)fluoranthene	99	98	NA	6,140,000.00	61,400.00	ug/kg
			Chrysene	110	56	NA	61,400,000.00	614,000.00	ug/kg
			Fluoranthene	220	89	NA	76,800,000.00	76,800,000.00	ug/kg
			Indeno(1,2,3-cd)pyrene	75	51	NA	614,000.00	6,140.00	ug/kg
			Pyrene	200	42	NA	57,600,000.00	57,600,000.00	ug/kg
			Acenaphthene	110	49	NA	115,000,000.00	115,000,000.00	ug/kg
			Anthracene	130	83	NA	576,000,000.00	576,000,000.00	ug/kg
			Benzo(a)anthracene	380	42	NA	614,000.00	6,140.00	ug/kg
		CB37-003	Benzo(a)pyrene	410	100	NA	61,400.00	614.00	ug/kg
			Benzo(b)fluoranthene	350	110	NA	614,000.00	6,140.00	ug/kg
			Benzo(k)fluoranthene	390	99	NA	6,140,000.00	61,400.00	ug/kg
			Chrysene	430	57	NA	61,400,000.00	614,000.00	ug/kg
			Fluoranthene	1100	90	NA	76,800,000.00	76,800,000.00	ug/kg
6-002	PAC 600-1002 – Temporary Waste Storage - Building 663	CB37-005	Indeno(1,2,3-cd)pyrene	240	51	NA	614,000.00	6,140.00	ug/kg
			Pyrene	810	43	NA	57,600,000.00	57,600,000.00	ug/kg
			Benzo(a)anthracene	66	40	NA	614,000.00	6,140.00	ug/kg
			Benzo(a)pyrene	100	96	NA	61,400.00	614.00	ug/kg
			Chrysene	85	54	NA	61,400,000.00	614,000.00	ug/kg
6-003	PAC 600-1003 – Temporary Waste Storage - Building 663	CB37-006	Fluoranthene	140	86	NA	76,800,000.00	76,800,000.00	ug/kg
			Indeno(1,2,3-cd)pyrene	74	49	NA	614,000.00	6,140.00	ug/kg

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IHSS Group	IHSS/PAC/UBC Site	Location Code	Analyte	Result	RL	Background Plus Two Standard Deviations	Tier I AL	Tier II AL	Units
		CB37-006	Pyrene	140	41	NA	57,600,000.00	57,600,000.00	ug/kg
			Acenaphthene	54	47	NA	115,000,000.00	115,000,000.00	ug/kg
			Benzo(a)anthracene	230	40	NA	614,000.00	6,140.00	ug/kg
			Benzo(a)pyrene	250	96	NA	61,400.00	614.00	ug/kg
			Benzo(b)fluoranthene	210	100	NA	614,000.00	6,140.00	ug/kg
			Benzo(k)fluoranthene	220	95	NA	6,140,000.00	61,400.00	ug/kg
			Chrysene	250	55	NA	61,400,000.00	614,000.00	ug/kg
			Dibenz(a,h)anthracene	70	48	NA	61,400.00	614.00	ug/kg
			Fluoranthene	630	86	NA	76,800,000.00	76,800,000.00	ug/kg
			Indeno(1,2,3-cd)pyrene	150	49	NA	614,000.00	6,140.00	ug/kg
			Pyrene	500	41	NA	57,600,000.00	57,600,000.00	ug/kg
		CB37-009	Acenaphthene	100	48	NA	115,000,000.00	115,000,000.00	ug/kg
			Anthracene	170	82	NA	576,000,000.00	576,000,000.00	ug/kg
			Benzo(a)anthracene	400	41	NA	614,000.00	6,140.00	ug/kg
			Benzo(a)pyrene	400	99	NA	61,400.00	614.00	ug/kg
			Benzo(b)fluoranthene	330	100	NA	614,000.00	6,140.00	ug/kg
			Benzo(k)fluoranthene	350	98	NA	6,140,000.00	61,400.00	ug/kg
			Chrysene	430	56	NA	61,400,000.00	614,000.00	ug/kg
			Dibenz(a,h)anthracene	92	49	NA	61,400.00	614.00	ug/kg
			Fluoranthene	1200	88	NA	76,800,000.00	76,800,000.00	ug/kg
			Fluorene	81	80	NA	76,800,000.00	76,800,000.00	ug/kg
		CB37-010	Indeno(1,2,3-cd)pyrene	250	50	NA	614,000.00	6,140.00	ug/kg
			Pyrene	920	42	NA	57,600,000.00	57,600,000.00	ug/kg
			Benzo(a)anthracene	55	39	NA	614,000.00	6,140.00	ug/kg
			Chrysene	70	54	NA	61,400,000.00	614,000.00	ug/kg
			Fluoranthene	110	85	NA	76,800,000.00	76,800,000.00	ug/kg
			Pyrene	100	40	NA	57,600,000.00	57,600,000.00	ug/kg

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IHSS Group	IHSS/PAC/UBC Site	Location Code	Analyte	Result	RL	Background Plus Two Standard Deviations	Tier I AL	Tier II AL	Units
		CB37-011	Benzo(a)anthracene	44	41	NA	614,000.00	6,140.00	ug/kg
			Fluoranthene	93	89	NA	76,800,000.00	76,800,000.00	ug/kg
			Pyrene	81	42	NA	57,600,000.00	57,600,000.00	ug/kg
		CB37-019	Acenaphthene	150	51	NA	115,000,000.00	115,000,000.00	ug/kg
			Anthracene	150	87	NA	576,000,000.00	576,000,000.00	ug/kg
			Benzo(a)anthracene	330	43	NA	614,000.00	6,140.00	ug/kg
			Benzo(a)pyrene	360	100	NA	614,000.00	614.00	ug/kg
			Benzo(b)fluoranthene	270	110	NA	614,000.00	6,140.00	ug/kg
			Benzo(k)fluoranthene	310	100	NA	6,140,000.00	61,400.00	ug/kg
			Chrysene	390	59	NA	61,400,000.00	614,000.00	ug/kg
			Dibenz(a,h)anthracene	120	52	NA	61,400.00	614.00	ug/kg
			Fluoranthene	920	94	NA	76,800,000.00	76,800,000.00	ug/kg
			Indeno(1,2,3-cd)pyrene	270	53	NA	614,000.00	6,140.00	ug/kg
			Pyrene	790	45	NA	57,600,000.00	57,600,000.00	ug/kg
		CB38-001	Benzo(a)anthracene	100	40	NA	614,000.00	6,140.00	ug/kg
			Benzo(a)pyrene	120	96	NA	61,400.00	614.00	ug/kg
			Benzo(b)fluoranthene	110	100	NA	614,000.00	6,140.00	ug/kg
			Chrysene	120	54	NA	61,400,000.00	614,000.00	ug/kg
			Fluoranthene	230	86	NA	76,800,000.00	76,800,000.00	ug/kg
		CB38-002	Indeno(1,2,3-cd)pyrene	92	49	NA	614,000.00	6,140.00	ug/kg
			Pyrene	210	41	NA	57,600,000.00	57,600,000.00	ug/kg
			2-Methylnaphthalene	19000	310	NA	76,800,000.00	76,800,000.00	ug/kg
			Anthracene	4800	410	NA	576,000,000.00	576,000,000.00	ug/kg
			Benzo(a)anthracene	5400	210	NA	614,000.00	6,140.00	ug/kg
			Benzo(a)pyrene	4500	500	NA	61,400.00	614.00	ug/kg
			Benzo(b)fluoranthene	2000	530	NA	614,000.00	6,140.00	ug/kg
			Benzo(k)fluoranthene	1200	490	NA	6,140,000.00	61,400.00	ug/kg

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IHSS Group	IHSS/PAC/UBC Site	Location Code	Analyte	Result	RL	Background Plus Two Standard Deviations	Tier I AL	Tier II AL	Units
			Chrysene	9100	280	NA	61,400,000.00	614,000.00	ug/kg
			Dibenz(a,h)anthracene	1800	250	NA	61,400.00	614.00	ug/kg
			Indeno(1,2,3-cd)pyrene	1500	250	NA	614,000.00	6,140.00	ug/kg
			Naphthalene	8900	370	NA	76,800,000.00	76,800,000.00	ug/kg
			Pyrene	12000	210	NA	57,600,000.00	57,600,000.00	ug/kg
		CC37-001	Bis(2-ethylhexyl)phthalate	250	73	NA	32,000,000.00	320,000.00	ug/kg
		CC37-003	Acenaphthene	75	49	NA	115,000,000.00	115,000,000.00	ug/kg
			Benzo(a)anthracene	190	42	NA	614,000.00	6,140.00	ug/kg
			Benzo(a)pyrene	200	100	NA	61,400.00	614.00	ug/kg
			Benzo(b)fluoranthene	150	110	NA	614,000.00	6,140.00	ug/kg
			Benzo(k)fluoranthene	180	99	NA	6,140,000.00	61,400.00	ug/kg
			Chrysene	220	57	NA	61,400,000.00	614,000.00	ug/kg
			Fluoranthene	520	89	NA	76,800,000.00	76,800,000.00	ug/kg
			Indeno(1,2,3-cd)pyrene	130	51	NA	614,000.00	6,140.00	ug/kg
		CC37-004	Pyrene	460	43	NA	57,600,000.00	57,600,000.00	ug/kg
			Benzoic acid	1100	370	NA	1,000,000,000.00	1,000,000,000.00	ug/kg
			Acenaphthene	320	50	NA	115,000,000.00	115,000,000.00	ug/kg
			Anthracene	480	84	NA	576,000,000.00	576,000,000.00	ug/kg
		CC37-006	Benzo(a)anthracene	860	42	NA	614,000.00	6,140.00	ug/kg
			Benzo(a)pyrene	740	100	NA	61,400.00	614.00	ug/kg
			Benzo(b)fluoranthene	590	110	NA	614,000.00	6,140.00	ug/kg
			Benzo(k)fluoranthene	710	100	NA	6,140,000.00	61,400.00	ug/kg
			Bis(2-ethylhexyl)phthalate	150	74	NA	32,000,000.00	320,000.00	ug/kg
			Chrysene	920	57	NA	61,400,000.00	614,000.00	ug/kg
			Fluoranthene	2600	90	NA	76,800,000.00	76,800,000.00	ug/kg
			Fluorene	270	82	NA	76,800,000.00	76,800,000.00	ug/kg
			Indeno(1,2,3-cd)pyrene	450	52	NA	614,000.00	6,140.00	ug/kg

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IHSS Group	IHSS/PAC/UBC Site	Location Code	Analyte	Result	RL	Background Plus Two Standard Deviations	Tier I AL	Tier II AL	Units
		CC37-008	Pyrene	2100	43	NA	57,600,000.00	57,600,000.00	ug/kg
			Benzo(a)anthracene	150	40	NA	614,000.00	6,140.00	ug/kg
			Benzo(a)pyrene	180	97	NA	61,400.00	614.00	ug/kg
			Benzo(b)fluoranthene	130	100	NA	614,000.00	6,140.00	ug/kg
			Benzo(k)fluoranthene	160	96	NA	6,140,000.00	61,400.00	ug/kg
			Chrysene	180	55	NA	61,400,000.00	614,000.00	ug/kg
			Fluoranthene	390	86	NA	76,800,000.00	768,000.00	ug/kg
			Indeno(1,2,3-cd)pyrene	120	49	NA	614,000.00	6,140.00	ug/kg
			Pyrene	360	41	NA	57,600,000.00	57,600,000.00	ug/kg
			Pyrene	77	42	NA	57,600,000.00	57,600,000.00	ug/kg
		CC37-012	Benzo(a)anthracene	130	47	NA	614,000.00	6,140.00	ug/kg
			Benzo(a)pyrene	150	61	NA	61,400.00	614.00	ug/kg
			Benzo(b)fluoranthene	130	76	NA	614,000.00	6,140.00	ug/kg
			Benzo(k)fluoranthene	130	82	NA	6,140,000.00	61,400.00	ug/kg
			Chrysene	150	41	NA	61,400,000.00	614,000.00	ug/kg
			Fluoranthene	370	47	NA	76,800,000.00	768,000.00	ug/kg
		CC37-014	Indeno(1,2,3-cd)pyrene	94	53	NA	614,000.00	6,140.00	ug/kg
			Pyrene	340	67	NA	57,600,000.00	57,600,000.00	ug/kg
			Bis(2-ethylhexyl)phthalate	140	82	NA	32,000,000.00	320,000.00	ug/kg
			Butyl benzylphthalate	310	75	NA	384,000,000.00	384,000,000.00	ug/kg
			Chrysene	41	40	NA	61,400,000.00	614,000.00	ug/kg
			Fluoranthene	72	46	NA	76,800,000.00	768,000,000.00	ug/kg
		CC37-016	Pyrene	73	65	NA	57,600,000.00	57,600,000.00	ug/kg
			2-Methylnaphthalene	130	41	NA	76,800,000.00	76,800,000.00	ug/kg
			Acenaphthene	590	52	NA	115,000,000.00	115,000,000.00	ug/kg
			Anthracene	630	75	NA	576,000,000.00	576,000,000.00	ug/kg
			Benzo(a)anthracene	1100	45	NA	614,000.00	6,140.00	ug/kg

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IHSS Group	IHSS/PAC/UBC Site	Location Code	Analyte	Result	RL	Background Plus Two Standard Deviations	Tier I AL	Tier II AL	Units
		CC37-016	Benzo(a)pyrene	1200	59	NA	61,400.00	614.00	ug/kg
			Benzo(b)fluoranthene	950	73	NA	614,000.00	6,140.00	ug/kg
			Benzo(k)fluoranthene	1100	79	NA	6,140,000.00	61,400.00	ug/kg
			Chrysene	1200	39	NA	61,400,000.00	614,000.00	ug/kg
			Dibenz(a,h)anthracene	340	72	NA	61,400.00	614.00	ug/kg
			Dibenzofuran	220	58	NA	7,680,000.00	7,680,000.00	ug/kg
			Fluoranthene	3000	45	NA	76,800,000.00	76,800,000.00	ug/kg
			Fluorene	430	63	NA	76,800,000.00	76,800,000.00	ug/kg
			Indeno(1,2,3-cd)pyrene	780	51	NA	614,000.00	6,140.00	ug/kg
			Naphthalene	380	49	NA	76,800,000.00	76,800,000.00	ug/kg
			Pentachlorophenol	410	74	NA	14,900,000.00	37,400.00	ug/kg
			Pyrene	2600	65	NA	57,600,000.00	57,600,000.00	ug/kg
		CC37-018	Benzo(a)anthracene	58	41	NA	614,000.00	6,140.00	ug/kg
			Chrysene	65	56	NA	61,400,000.00	614,000.00	ug/kg
			Fluoranthene	150	88	NA	76,800,000.00	76,800,000.00	ug/kg
			Pyrene	100	42	NA	57,600,000.00	57,600,000.00	ug/kg
		CC37-020	Pyrene	100	41	NA	57,600,000.00	57,600,000.00	ug/kg
		CC37-024	Butyl benzylphthalate	310	70	NA	384,000,000.00	384,000,000.00	ug/kg
		CC38-001	Benzo(a)anthracene	150	41	NA	614,000.00	6,140.00	ug/kg
			Benzo(a)pyrene	170	99	NA	61,400.00	614.00	ug/kg
			Benzo(b)fluoranthene	140	110	NA	614,000.00	6,140.00	ug/kg
			Benzo(k)fluoranthene	150	98	NA	6,140,000.00	61,400.00	ug/kg
			Chrysene	190	56	NA	61,400,000.00	614,000.00	ug/kg
			Fluoranthene	370	89	NA	76,800,000.00	76,800,000.00	ug/kg
			Indeno(1,2,3-cd)pyrene	120	51	NA	614,000.00	6,140.00	ug/kg
			Pyrene	360	42	NA	57,600,000.00	57,600,000.00	ug/kg
			Acetone	5.256427	130	NA	27,200,000.00	272,000.00	ug/kg

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IHSS Group	IHSS/PAC/UBC Site	Location Code	Analyte	Result	RL	Background Plus Two Standard Deviations	Tier I AL	Tier II AL	Units
		CC38-002	Benzo(a)anthracene	55	41	NA	614,000.00	6,140,000.00	ug/kg
			Chrysene	70	55	NA	61,400,000.00	614,000,000.00	ug/kg
			Fluoranthene	140	87	NA	76,800,000.00	76,800,000,000.00	ug/kg
			Pyrene	140	42	NA	57,600,000.00	57,600,000,000.00	ug/kg
		CB37-006	Benzene	230		NA	1,410.00	14.10	ug/kg
			Benzo(a)anthracene	49	46	NA	160,000.00	1,600,000.00	ug/kg
			Fluoranthene	120	98	NA	537,000,000.00	5,370,000,000.00	ug/kg
			Pyrene	94	47	NA	397,000,000.00	3,970,000,000.00	ug/kg
		CB37-013	Benzo(a)anthracene	64	45	NA	160,000.00	1,600,000.00	ug/kg
			Bis(2-ethylhexyl)phthalate	300	80	NA	311,000,000.00	3,110,000,000.00	ug/kg
			Chrysene	81	62	NA	16,000,000.00	160,000,000.00	ug/kg
			Fluoranthene	160	97	NA	537,000,000.00	5,370,000,000.00	ug/kg
		CC37-004	Pyrene	140	46	NA	397,000,000.00	3,970,000,000.00	ug/kg
			Anthracene	220	70	NA	1,000,000,000.00	11,200,000.00	ug/kg
			Fluoranthene	230	42	NA	537,000,000.00	5,370,000,000.00	ug/kg
			Pyrene	220	61	NA	397,000,000.00	3,970,000,000.00	ug/kg
			Tetrachloroethene	1.118467	6.1	NA	3,150.00	31.50	ug/kg
			Toluene	0.835778	6.1	NA	707,000.00	7,070,000.00	ug/kg
			Tetrachloroethene	1.084334	6	NA	3,150.00	31.50	ug/kg
			Toluene	1.060238	6	NA	707,000.00	7,070,000.00	ug/kg
		CC37-009	Toluene	0.60982	5.3	NA	707,000.00	7,070,000.00	ug/kg
			Methylene chloride	1.9	0.92	NA	578.00	5.78	ug/kg
			Pyrene	44	44	NA	397,000,000.00	3,970,000,000.00	ug/kg
			Benzo(a)anthracene	52	48	NA	160,000.00	1,600,000.00	ug/kg
		CC37-014	Chrysene	130	66	NA	16,000,000.00	160,000,000.00	ug/kg
			Pyrene	77	49	NA	397,000,000.00	3,970,000,000.00	ug/kg
			Chrysene	93	60	NA	16,000,000.00	160,000,000.00	ug/kg
			Chrysene						

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IHSS Group	IHSS/PAC/UBC Site	Location Code	Analyte	Result	RL	Background Plus Two Standard Deviations	Tier I AL	Tier II AL	Units
		CC37-022	Acetone	19.74799	110	NA	27,200,000.00	272,000.00	ug/kg
		CC37-023	Methylene chloride	1.8	0.87	NA	578.00	5.78	ug/kg
		CC37-024	Methylene chloride	2.1	0.96	NA	578.00	5.78	ug/kg
		CC37-CC04	Americium-241	0.473	0.188	0.02	209.00	38.00	pCi/g
			Plutonium-239/240	3.70	0.118	0.02	1,090.00	252.00	pCi/g
			Uranium-234	0.464	0.110	2.64	1,738.00	307.00	pCi/g
			Uranium-235	ND	0.125	0.12	113.00	24.00	pCi/g
			Uranium -238	0.625	0.110	1.49	506.00	103.00	pCi/g
		CC37-CC06	Americium-241	2.71	0.281	0.02	209.00	38.00	pCi/g
			Plutonium-239/240	17.1	0.0814	0.02	1,090.00	252.00	pCi/g
			Uranium-234	0.267	0.125	2.64	1,738.00	307.00	pCi/g
			Uranium-235	ND	0.158	0.12	113.00	24.00	pCi/g
			Uranium -238	0.525	0.169	1.49	506.00	103.00	pCi/g

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4.1.3 Long Term Stewardship Recommendations

SVOC contamination in surface soil and radionuclide contamination in the subsurface soil will be analyzed in the Sitewide CRA, which is part of the RCRA Facility Investigation/Remedial Investigation and Corrective Measures Study/Feasibility Study (RFI/RI and CMS/FS) that will be conducted for the Site. The need for and extent of any, more general, long term stewardship activities will also be analyzed in the RFI/RI and CMS/FS and will be proposed as part of the preferred alternative in the Proposed Plan for the Site. Institutional controls and other long term stewardship requirements for Rocky Flats will ultimately be contained in Corrective Action Decision/Record of Decision (CAD/RODs), in any post-closure Colorado Hazardous Waste Act permit that may be required, and in any post-RFCA agreement.

No specific long term stewardship activities are recommended for IHSS Group 600-1 beyond the generally applicable Site requirements that may imposed on this area in the future, which are dependent upon the final remedy selected. Institutional controls that will be used as appropriate for this area include prohibitions on construction of buildings in the IA, restrictions on excavation or other soil disturbance, or prohibitions on groundwater pumping in the area of IHSS Group 600-1.

No specific engineered controls are anticipated as a result of the conditions remaining in IHSS Group 600-1.

No specific environmental monitoring is anticipated as a result of the conditions remaining in IHSS Group 600-1.

This closeout report and associated documentation will be retained as part of the Rocky Flats administrative record file. These specific long-term stewardship recommendations will also be summarized in the Rocky Flats Long Term Stewardship Strategy.

4.1.4 Accelerated Action Stewardship

Stewardship actions that were implemented during the accelerated action included posting signs and barriers, including yellow chain and jersey barriers.

5.0 DATA QUALITY ASSESSMENT

The DQA is based on various criteria derived from U.S. Environmental Protection Agency (EPA) guidance, particularly the DQO process, and DOE quality requirements; references are given in the last subsection of this DQA. The DQA was performed independent of data reduction and evaluation given throughout the remainder of this report. Quality control (QC) evaluations performed on the IA Group 600-1 data set are documented within the MS ACCESS database "PlanvsActuals2.mdb".

5.1 Verification and Validation of Results

Verification ensures that data produced and used by the project are documented and traceable per quality requirements. Validation consists of a technical review of analytical results such that any limitations relative to project decisions are stated. Verification and Validation (V&V) criteria include:

- Chain-of-custody;
- Preservation and hold-times;
- Precision and accuracy
- Instrument calibrations;
- Preparation blanks;
- Interference check samples (metals);
- Matrix spikes/matrix spike duplicates (MS/MSD);
- Laboratory control samples (LCS);
- Field duplicate measurements;
- Chemical yield (radiochemistry);
- Required detection limits/minimum detectable activities (sensitivity of chemical and radiochemical measurements, respectively); and
- Sample analysis and preparation methods.

Evaluation of V&V criteria ensures that precision, accuracy, representativeness, completeness, comparability, and sensitivity (PARCCS parameters are satisfactory, i.e., within tolerances acceptable to the project. Satisfactory V&V of laboratory quality controls are captured through application of validation "flags", or qualifiers, to individual records. Validation results are summarized in the "Completeness" subsection.

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Field sampling was conducted according to the approved IASAP, including related standard operating procedures and addenda. Raw hardcopy data, e.g., individual (analytical) data packages, are currently filed by RIN and are maintained by Kaiser-Hill, LLC Analytical Services Division; older hardcopies may reside in the Federal Center (Lakewood, CO, NARA). Digital data are stored in the RFETS Soil and Water Database.

5.1.1 Precision and Accuracy

Precision and accuracy of laboratory results are adequate based on validation frequencies and results, which are tabulated in the "Completeness" section.

Precision results from the latest field sampling event are adequate based on repeatability of 8 real/duplicate sample pairs, where all concentrations were below applicable RFCA Tier II ALs. Frequency of duplicate collection was >5%, consistent with DQOs of the project. Field blanks collected during the project indicate no false positives in the data set due to equipment cross-contamination.

5.1.2 Representativeness

Samples acquired for the project are representative based on the types, number, and location of samples acquired relative to the site-specific history (DOE, 2001). Other criteria that corroborate representativeness include the following:

- Implementation of industry-standard chain-of-custody protocols;
- Compliance with sample preservation and hold times; and
- Compliance with documented and Site-approved sampling plans and procedures, including SW-846 analytical methods.

Maps and tables sample locations are displayed in previous sections of this report.

5.1.3 Completeness

Sampling completeness was evaluated through an inventory of the number and types of samples acquired for the IHSS Group 600-1 area of interest. Specifically, were enough samples collected, and valid results produced, to make project decisions?

The following number of surface soil samples were evaluated, relative to the analytical suites:

- Radionuclides: 40
- SVOCs: 40

The following number of subsurface soil samples (>0.5' depth) were evaluated, relative to the analytical suites:

- Radionuclides: 49
- Metals: 4

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- VOCs: 43
- SVOCs: 47

Satisfactory V&V are indicated by a 10% (or greater) validation frequency (on a Sitewide basis) of all results by method and matrix-type, and <10% rejection of those records validated. Tables 10 and 11 indicate that validation frequencies for the listed analytical suites. Anion action levels are much greater than the concentrations measured in the soils, thus there is no impact on decisions for the project. Any rejected records were disqualified from use.

5.1.4 Comparability

All results presented are comparable with nation-wide Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) data and DOE complex-wide environmental data. This comparability is based on:

- Use of standardized engineering units in the reporting of measurement results; Consistent sensitivities of measurements (generally $\leq \frac{1}{2}$ corresponding action levels); and,
- Use of site-approved procedures, work plans, and quality controls (e.g., Contractual Statements of Work for lab analyses).

5.1.5 Sensitivity

Reporting limits, in units of ug/kg (ppb) for organics, mg/kg (parts per million) for metals, and pCi/g for radionuclides, were compared with RFCA Tier I and Tier II action levels on a record-by-record basis. Adequate sensitivities of analytical methods were attained for all results except for those analytes listed below. The number of records is also given with respect to each analyte and sample type. "Adequate" sensitivity is defined as an RL less than the analyte's associated action level, typically <1/2 the action level.

5.2 SUMMARY

Data quality is acceptable for project decisions based on the V&V criteria cited and with the qualifications given.

Table 10

IA Group 600-1 Summary of Validated Records, Surface Soil Samples, in the RFETS Soil-Water Database

Validation Qualifier Code	Total Records	Metals 6010	SVOC 8270
Null	2,504	31	2473
V1	136		136

Table 11

IA Group 600-1 Summary of Validated Records, Subsurface Soil Samples, in the RFETS Soil-Water Database

Validation Qualifier Code	Total Records	8260	8260	SVOC 8270	VOA 8260
Null	7,672	630	3,113	3,538	391
V1	136			136	

Note: Multiple 8260 analyses performed at different labs

56

Table 12
Subsurface Soils, RFCA Tier II

ANALYTE_NAME	Count of SAMP_NUM
1,1,2,2-Tetrachloroethane	72
1,2-Dichloroethane	1
2,4,6-Trichlorophenol	1
2,4-DINITROPHENOL	52
2,4-DINITROTOLUENE	52
2,4-Dinitrophenol	1
2,4-Dinitrotoluene	1
2,6-DINITROTOLUENE	52
2,6-Dinitrotoluene	1
3,3'-DICHLOBENZIDINE	52
3,3'-Dichlorobenzidine	1
Arsenic	7
BIS(2-CHLOROETHYL) ETHER	52
Indeno(1,2,3-cd)pyrene	1
Methylene Chloride	4
Methylene chloride	25
N-NITROSO-DI-N-PROPYLAMINE	52
N-Nitroso-di-n-propylamine	1
N-nitrosodiphenylamine	1
NITROBENZENE	52
Naphthalene	1
PENTACHLOROPHENOL	52
Trans-1,3-Dichloropropene	2
Vinyl Chloride	25
Vinyl chloride	47
alpha-BHC	1
bis(2-Chloroethyl) ether	1
cis-1,3-Dichloropropene	72
trans-1,3-Dichloropropene	70

Table 13
Subsurface Soils, RFCA Tier I

ANALYTE_NAME	Count of SAMP_NUM
2,4-DINITROTOLUENE	47
2,4-Dinitrotoluene	1
2,6-DINITROTOLUENE	52
2,6-Dinitrotoluene	1
BIS(2-CHLOROETHYL) ETHER	52
N-NITROSO-DI-N-PROPYLAMINE	52
N-Nitroso-di-n-propylamine	1
bis(2-Chloroethyl) ether	1

51

6.0 REFERENCES

CDPHE, 2002, Environmental Restoration RFCA Standard Operating Protocol FY02 Notification #02-04 Approval Letter, June 2002.

DOE, 1992, Historical Release Report for the Rocky Flats Plant, Golden, CO.

DOE, 1999a, RFCA Standard Operating Protocol for Recycling Concrete, Rocky Flats Environmental Technology Site, Golden, CO.

DOE, 2000, Industrial Area Data Summary Report, Rocky Flats Environmental Technology Site, Golden, CO, September.

DOE, 2001a, Industrial Area Sampling and Analysis Plan, Rocky Flats Environmental Technology Site, Golden, CO, June.

DOE 2001b, Industrial Area Sampling and Analysis Plan Addendum #IA-02-01, Rocky Flats Environmental Technology Site, Golden, CO, November.

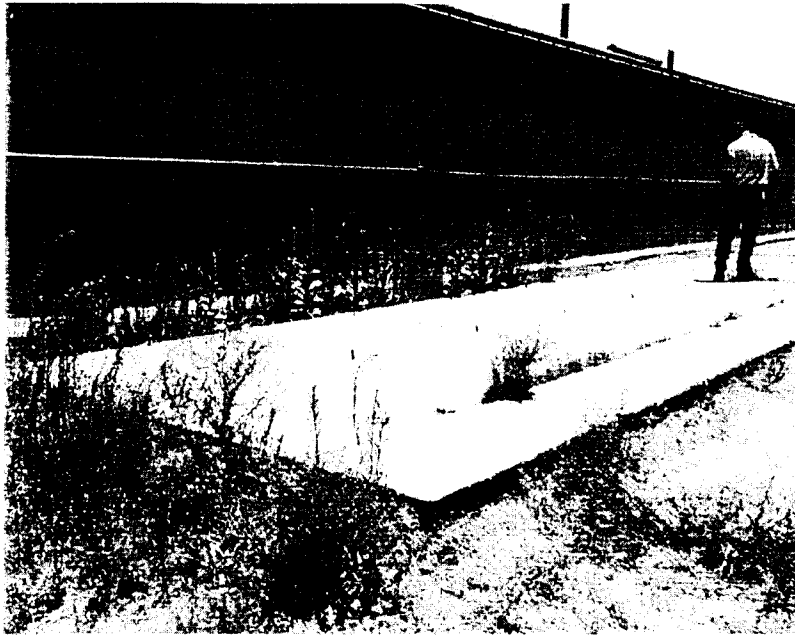
DOE, 2001c, Annual Update for the Historical Release Report, Rocky Flats Environmental Technology Site, Golden, CO, September.

DOE 2002a, Environmental Restoration RFCA Standard Operating Protocol for Routine Soil Remediation, Rocky Flats Environmental Technology Site, Golden, CO. January.

DOE 2002b, Environmental Restoration RFCA Standard Operating Protocol Notification #02-04, Rocky Flats Environmental Technology Site, Golden, CO, June.

58

600 1 Project Photos



West Side of 663



662 Before East Slab Removal



663 Slab



Sawcutting in Action



Results of 663 Sawcut



Results of Sawcut



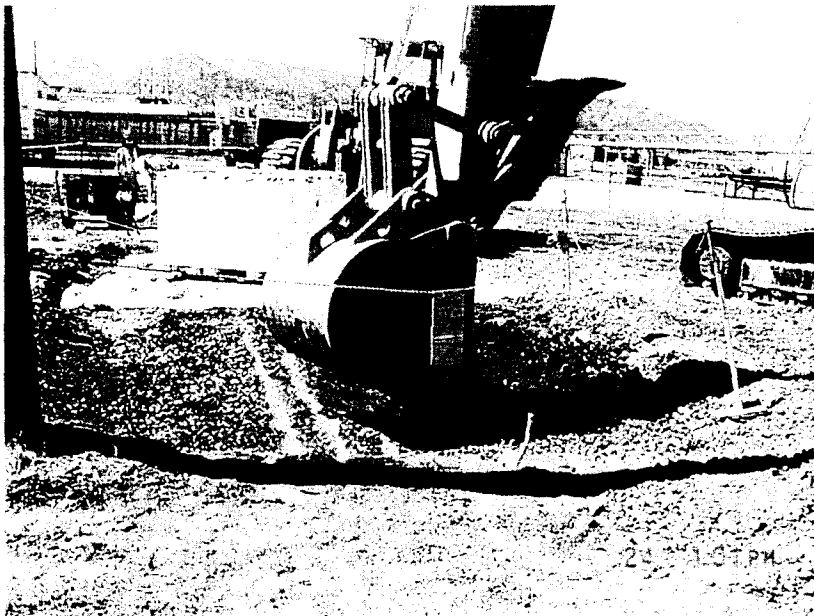
Hot Spot After Fixative is Applied



Fixative Application



Fixative Application



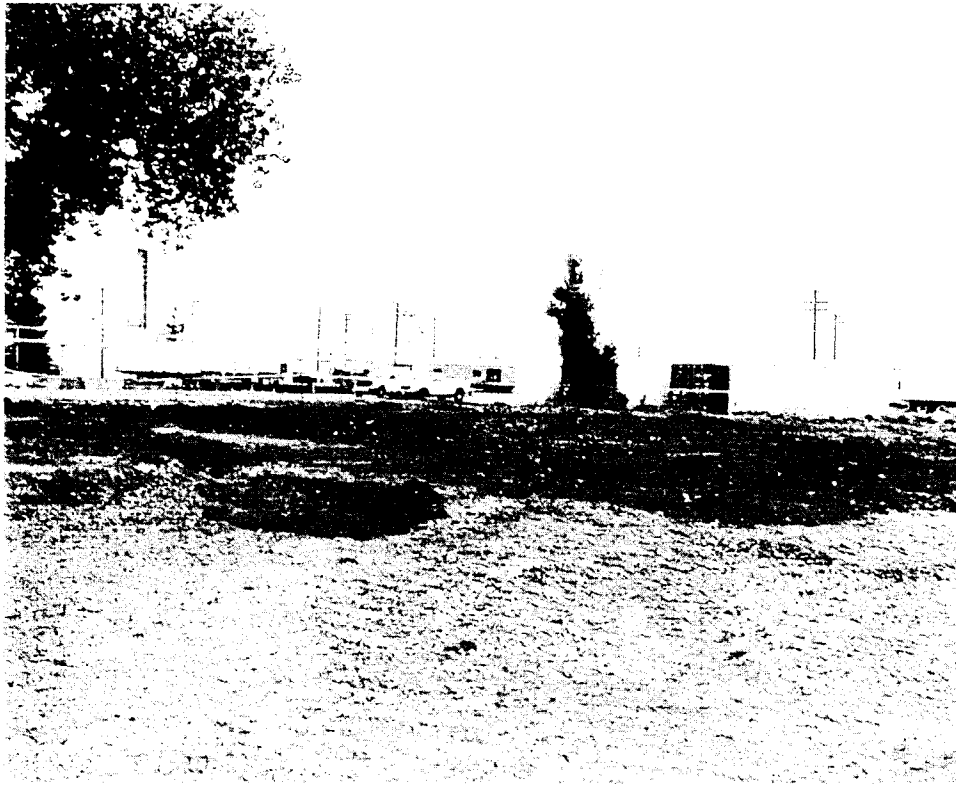
Initial Excavation



Final Excavation



Second Slab under 663



Cleaned East Slabs

**ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE
ENVIRONMENTAL RESTORATION
REGULATORY CONTACT RECORD**

Date/Time: June 19, 2002

Site Contact(s): Susan Serreze
Phone: 303-966-2677

Regulatory Contact: Elizabeth Pottorff, CDPHE; David Kruchek, CDPHE; Gary
Kleeman, EPA
Phone: 303-692-3429, 303-692-3328, 303-312-6246

Agency: CDPHE/EPA

Purpose of Contact: Notification to Remove Miscellaneous Slabs

Discussion

As discussed at the May 30, 2002 meeting on ER RSOP Notification #02-04, this Regulatory Contact Record is the notification that miscellaneous slabs east of IHSS Group 600-1 will be removed at the same time as slabs covered under ER RSOP Notification #02-04.

Required Distribution:

C. Spreng, CDPHE	S. Serreze, Arcadia
D. Kruchek, CDPHE	C. Madore, RMC
E. Pottorff, CDPHE	M. Burmeister, RMC
G. Kleeman, EPA	C. Cowdery, Washington Group
N. Castaneda, RFFO	S. Luker, RMC
R. DiSalvo, RFFO	ER Meeting Minutes Book
S. Surovchek, RFFO	Administrative Record
L. Brooks, K-H	
M. Broussard, K-H	
L. Butler, K-H	
A. Primrose, K-H	
S. Nesta, K-H	
L. Norland, K-H	

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE ER REGULATORY CONTACT RECORD

Date/Time: September 11, 2002/ 1445

Site Contact(s): Mike Bemski
Phone: 303-966-4090

Regulatory Contact: David Kruchek
Phone: 303-628-3328

Agency: CDPHE

Purpose of Contact: Approval to backfill excavations associated with the former B-662 Slab

Discussion

On Monday, September 9, Dave Kruchek and I discussed backfill of excavations associated with the former B-662 Slab. The first excavation was the product of the removal of the B-662 footer foundation at the north end of the former slab. Present within the footer were a series of pipes that had rusted into the soil. Dave approved the backfill, but requested a sample be collected in the vicinity of the where the pipes had been. The sample will be collected during Geoprobe characterization of the former slab area. The second excavation was in association with exploration for a documented second slab beneath the recently removed slab. No second slab was found. Dave approved the backfill of the second excavation, but requested that should any Geoprobe characterization locations fall near the former excavation, the location be offset away sufficiently to not be sampling soil that had possibly been de-volatilized from the excavation.

Contact Record Prepared By: Mike Bemski

Required Distribution:

S. Bell, RFFO
L. Brooks, K-H ESS
L. Butler, K-H RISS
C. Deck, K-H Legal
R. DiSalvo, RFFO
S. Gunderson, CDPHE
J. Legare, RFFO

D. Mayo, K-H RISS
J. Mead, K-H ESS
S. Nesta, K-H RISS
K. North, K-H ESS
T. Rehder, USEPA
D. Shelton, K-H
C. Spreng, CDPHE

Additional Distribution

(choose names as applicable):

M. Broussard, K-H RISS
J. Hindman, CDPHE
G. Kleeman, USEPA
D. Kruchek, CDPHE
L. Norland, K-H RISS
A. Primrose, K-H RISS
E. Pottorff, CDPHE
S. Tower, DOE

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ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE ER REGULATORY CONTACT RECORD

Date/Time: October 10, 2002/ 5:28PM

Site Contact(s): Michael Bemski
Phone: 303-966-4090

Regulatory Contact: David Kruchek
Phone: 303-692-3328

Agency: Colorado Department of Public Health and Environment

Purpose of Contact: Permission to backfill excavation of former hot spot at the southeast corner of the former Building 663 slab

Discussion

This Contact Record is the follow-up to our telephone conversation of earlier today. After 3 attempts, sample results indicate all contamination associated with the former hot spot discovered under the southeast corner of the former Building 663 slab has been removed. Our discussion pondered why the contamination persisted from the slab to over 3 feet into the soil below and still had a sub-action level hit below 5 feet. Also unknown is why no lateral dispersion of the contamination had occurred. As the history of what happened to create the spill and how it was handled will remain unknown, the discussion served to raise the questions but there are no clear answers. The final sampling explored for contamination immediately under the former crack in the slab and the area adjacent. As no contamination was found to be at or above action levels of 50 pCi/g Pu, permission was given to backfill the excavation. The two samples with the highest results have been sent to an offsite lab for final confirmation alpha spectrometry. Should any significant deviation from the earlier results be noted, CDPHE will be contacted.

Contact Record Prepared By: Michael Bemski

Required Distribution:

S. Bell, RFFO
L. Brooks, K-H ESS
L. Butler, K-H RISS
C. Deck, K-H Legal
R. DiSalvo, RFFO
S. Gunderson, CDPHE
J. Legare, RFFO

D. Mayo, K-H RISS
J. Mead, K-H ESS
S. Nesta, K-H RISS
K. North, K-H ESS
T. Rehder, USEPA
D. Shelton, K-H
C. Spreng, CDPHE

Additional Distribution

(choose names as applicable):

M. Broussard, K-H RISS
J. Hindman, CDPHE
G. Kleeman, USEPA
D. Kruchek, CDPHE
L. Norland, K-H RISS
A. Primrose, K-H RISS
E. Pottorff, CDPHE
S. Tower, DOE

69

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE ER REGULATORY CONTACT RECORD

Date/Time: November 14, 2002 / 1430

Site Contact(s): Mike Bemski
Phone: 303-966-4090

Regulatory Contacts: Dave Kruchek / Elizabeth Pottorff
Phones: 303-692-3328 / 303-692-3429

Agency: Colorado Department of Public Health and Environment

Purpose of Contact: Notification of completion of the 600-1 Remediation Project

Discussion

At the meeting held earlier today regarding the IHSS Group 600-1, we reviewed the final analytical data and agreed that the 600-1 Remediation Project is considered completed. It was noted that the analytical results showed there were no remaining Tier I exceedances and the Tier II exceedances were limited to benzo(a)pyrene, dibenz(a,h)anthracene, benzene, and methylene chloride. It was also discussed that there will need to be inclusion of data relative to wildlife workers in the annual stewardship reports that will be developed at a later date. Earlier today, Dave had driven by the 600-1 project area and we agreed that though the current surface is not what will be expected for final configuration, no further contouring is necessary in association with this project.

Contact Record Prepared By: Mike Bemski

Required Distribution:

S. Bell, RFFO
L. Brooks, K-H ESS
L. Butler, K-H RISS
C. Deck, K-H Legal
R. DiSalvo, RFFO
S. Gunderson, CDPHE
J. Legare, RFFO

D. Mayo, K-H RISS
J. Mead, K-H ESS
S. Nesta, K-H RISS
K. North, K-H ESS
T. Rehder, USEPA
D. Shelton, K-H
C. Spreng, CDPHE

Additional Distribution

(choose names as applicable):

M. Broussard, K-H RISS
J. Hindman, CDPHE
G. Kleeman, USEPA
D. Kruchek, CDPHE
L. Norland, K-H RISS
A. Primrose, K-H RISS
E. Pottorff, CDPHE
S. Tower, DOE

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE REGULATORY CONTACT RECORD

Date/Time: August 7, 2002/ 1430

Site Contact(s): Steve Nesta and Steve Tower
Phone: 6386 and 2133

Regulatory Contact: Dave Kruchek
Phone: 6728

Agency: CDPHE

Purpose of Contact: Clarify requirements for ER/D&D Interface for B442/662/663

Discussion

A meeting was held with KH, DOE, and CDPHE to resolve the issue of proper notification for the B442, B662, and B663 slab and sewer pipe removals. It was agreed that it was not correct to split a single facility into two separate types (the uncontaminated building as Type 1, and the contaminated slab as Type 2). Instead, the proper path for future projects will be to submit a RSOP notification for a facility as a Type 2, identify the free releasable portions, and transfer the remaining portions such as contaminated slabs to ER, for remediation as debris for remediation under the ER RSOP.

For the work that has been done to date, it was further agreed with CDPHE that a new Facility Disposition RSOP notification letter will be submitted to identify work at B442, B662 and B663, that has been transitioned to the ER RSOP. At B442, the slab, and the sewer pipe was left in place after building demolition because of fixed contamination. ER has subsequently removed the B442 slab and removed the sewer pipe to greater than six feet below grade (ER Notice #02-06). Because the slabs at B662 and B663 are contaminated, they were left in place to be removed by ER under the ER RSOP (ER Notice # 02-07). The new RSOP notification letter will address these issues formally.

Contact Record Prepared By: Steve Nesta

Required Distribution:

P. Arnold, K-H 371
J. Berardini, K-H MS

K. Lavorato, K-H MS
J. Legare, DOE

Additional Distribution:

A. Primrose
D. Foss

Contact Record 4/10/00
Rev. 6/18/02

C. Deck, K-H
R. DiSalvo
C. Gilbreath, K-H 771
S. Gunderson, CDPHE
T. Hopkins, K-H 776
L. Kilpatrick, RFFO

R. Leitner, K-H 371
J. Mead, K-H ESS
S. Nesta, K-H RISS
K. North, K-H ESS
B. Prymak, DOE
T. Rehder, USEPA
D. Shelton, K-H

K. Kehler
S. Tower
F. Gerdeman
D. Kruchek
L. Butler _____

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Serreze, Susan

From: David Kruchek
Sent: Friday, November 15, 2002 7:27 AM
To: #ER Contact Records; Bemski, Mike; Serreze, Susan
Cc: Carl Spreng; Elizabeth Pottorff; Steve Tarlton
Subject: Re: 600-1 Notification of Completion Contact Record

Mike,

I don't know if you got the message I tried to leave on your cell phone, so I will re-state it here. Although we did review the raw data as presented in the meeting and did not identify any specific issues other than as addressed in your contact record, the SORs will still need to be developed. If any SORs are indicated to be excessively higher than the norm for this data set then additional soil remediation/removal may be warranted. So...when the SORs are calculated please let us know.

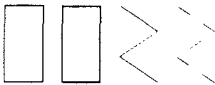
David

>>> "Bemski, Mike" <Mike.Bemski@rfets.gov> 11/14/02 04:59PM >>>
<<600-1 ER_Contact_record1 11-14-02.doc>>

Mike Bemski
Environmental Restoration
303-966-4090, FAX 966-4165
Cell Phone 303-994-2305
dp 303-212-6271, Bldg. T-124-A, Cube 38
Email mike.bemski@rfets.gov

Figure 7
Residual Contamination
IHSS Group 600-1

KEY



• Tier 2 Exceedance

Greater Than Background
or MDL

Less Than Background
or MDL

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40 0 40 80 Feet
Scale = 1:1,050

State Plane Coordinate Projection
Colorado Central Zone
Datum: NAD 27

U.S. Department of Energy
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Prepared by



December 2002

884

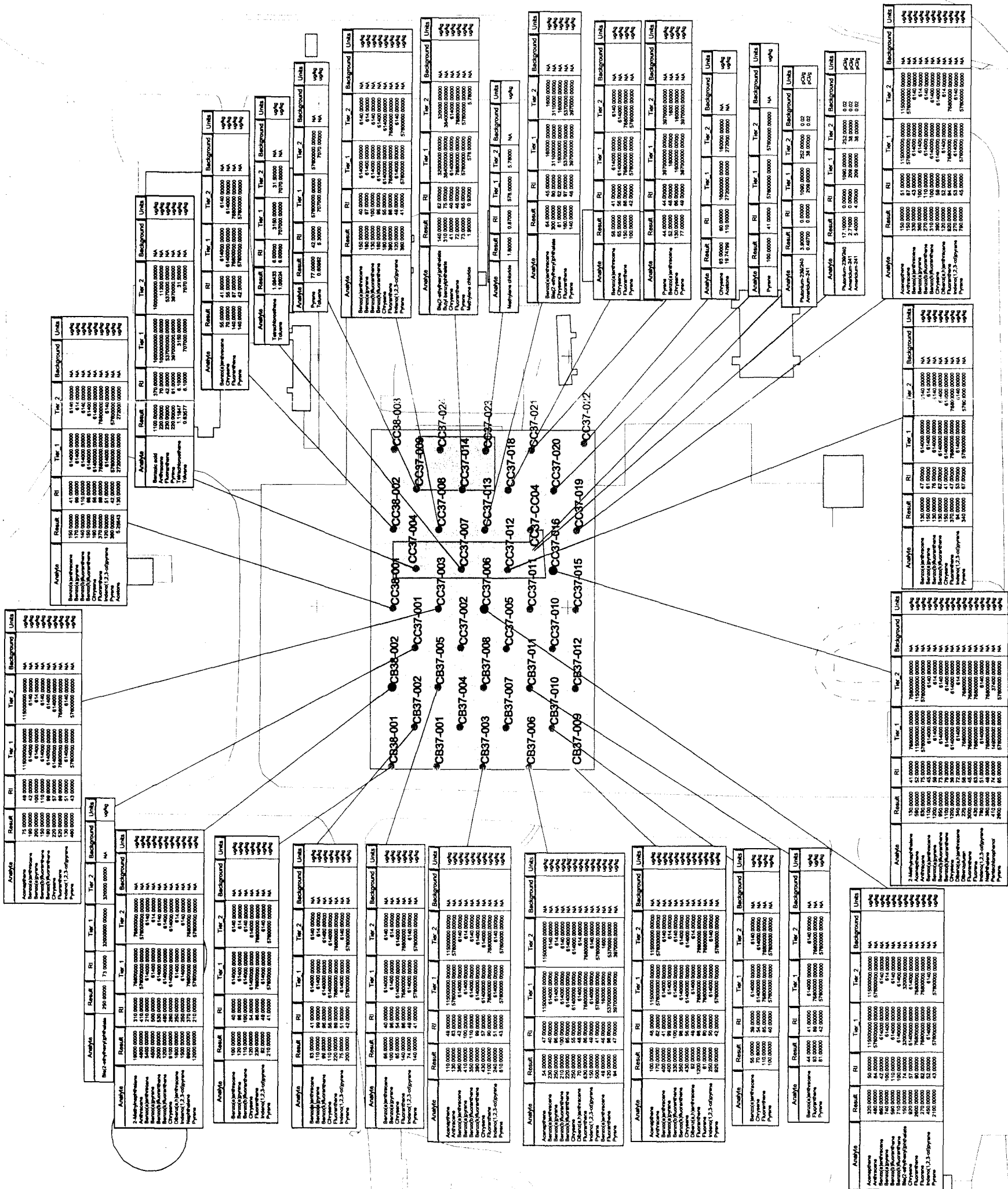
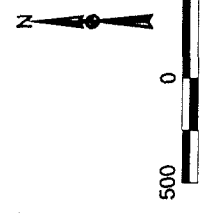


Figure 1
IHSS Group 600-1
Location Map

KEY

- PAC
- Building
- Paved area
- Dirt road
- Stream, ditch,
or other drainage
- Fence

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Scale = 1:11,000

State Plane Coordinate Projection
Colorado Central Zone
Datum: NAD27

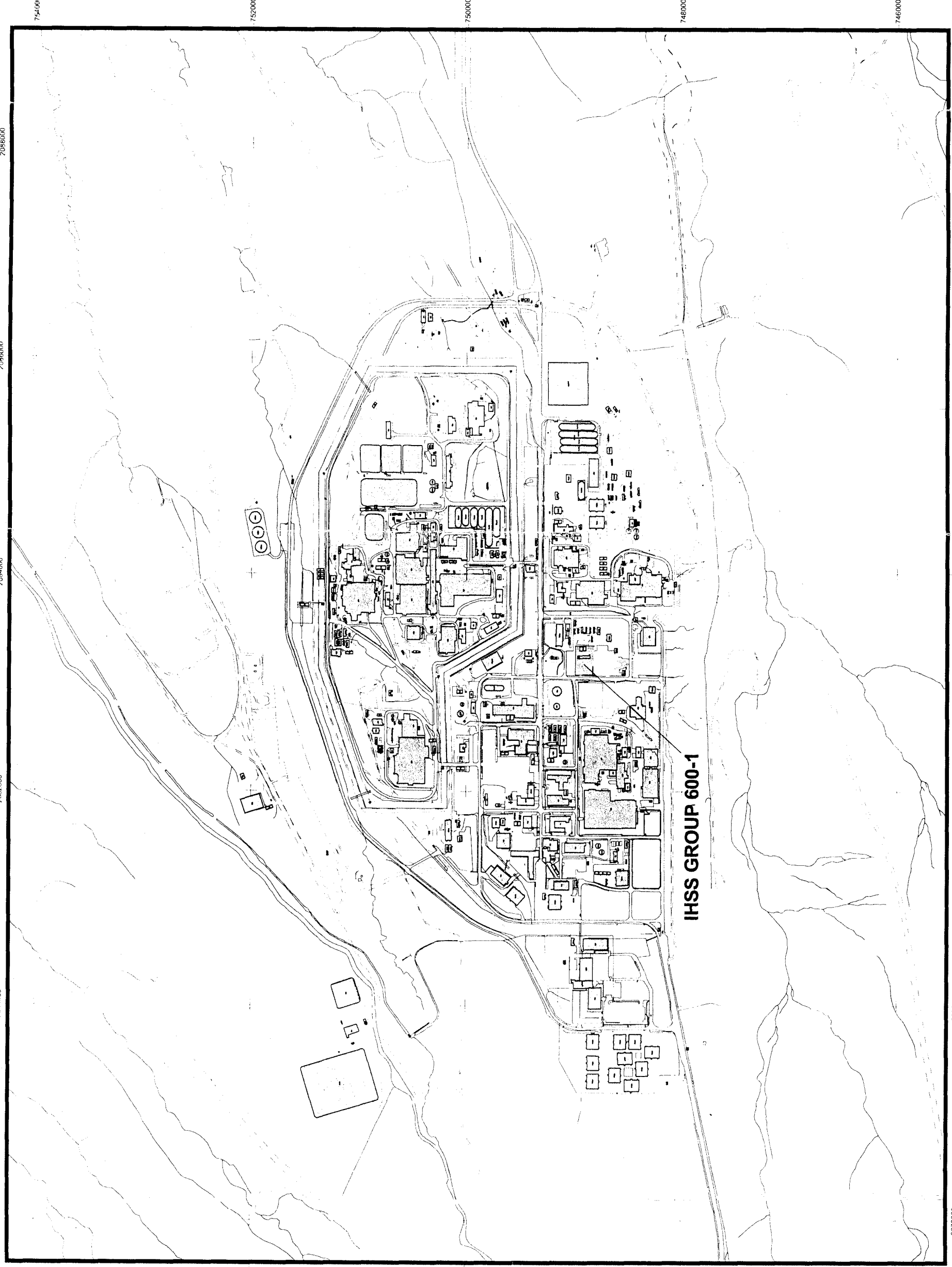
U.S. Department of Energy
Rocky Flats Environmental Technology Site

Prepared by:



existingdata\ihssgroup500-110-22-02.sps.apr

November 2002



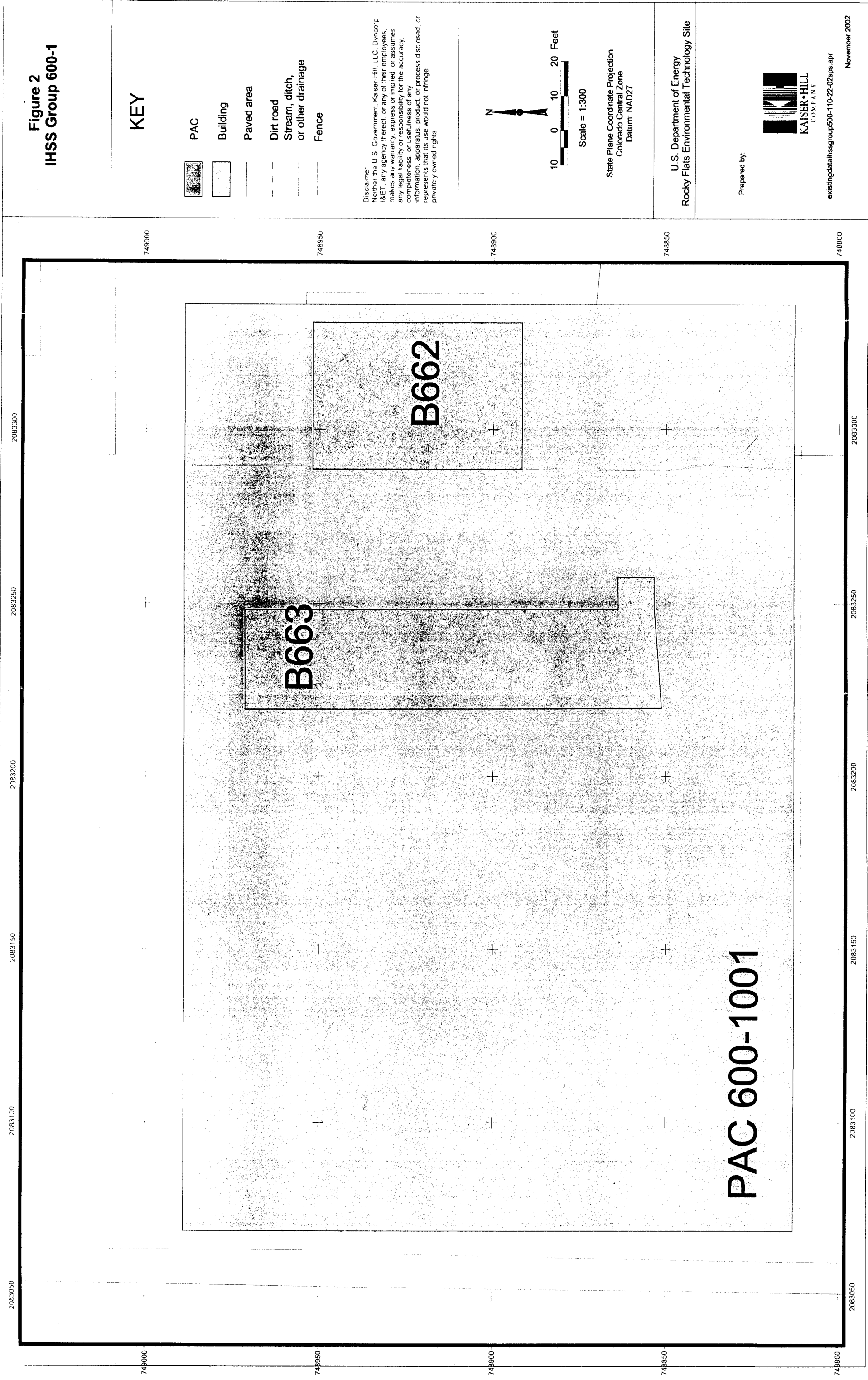


Figure 2
IHSS Group 600-1

KEY



PAC



Building

Paved area

Dirt road

Stream, ditch,
or other drainage

Fence

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10 0 10 20 Feet

Scale = 1:300

State Plane Coordinate Projection
Colorado Central Zone
Datum: NAD27

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Prepared by:



existingdata\ihssgroup500-110-22-02.sps.apr

November 2002

Figure 3
Location of Existing
Sampling Locations With
Results Greater Than Background
Mean Plus Two Standard Deviations
or Method Detection Limits

KEY

PAC

Building

Paved area

Dirt road

Stream, ditch,
or other drainage

Existing sampling location

Δ Subsurface soil

☐ Surface soil

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Scale = 1:1,000

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Colorado Central Zone
Datum: NAD27

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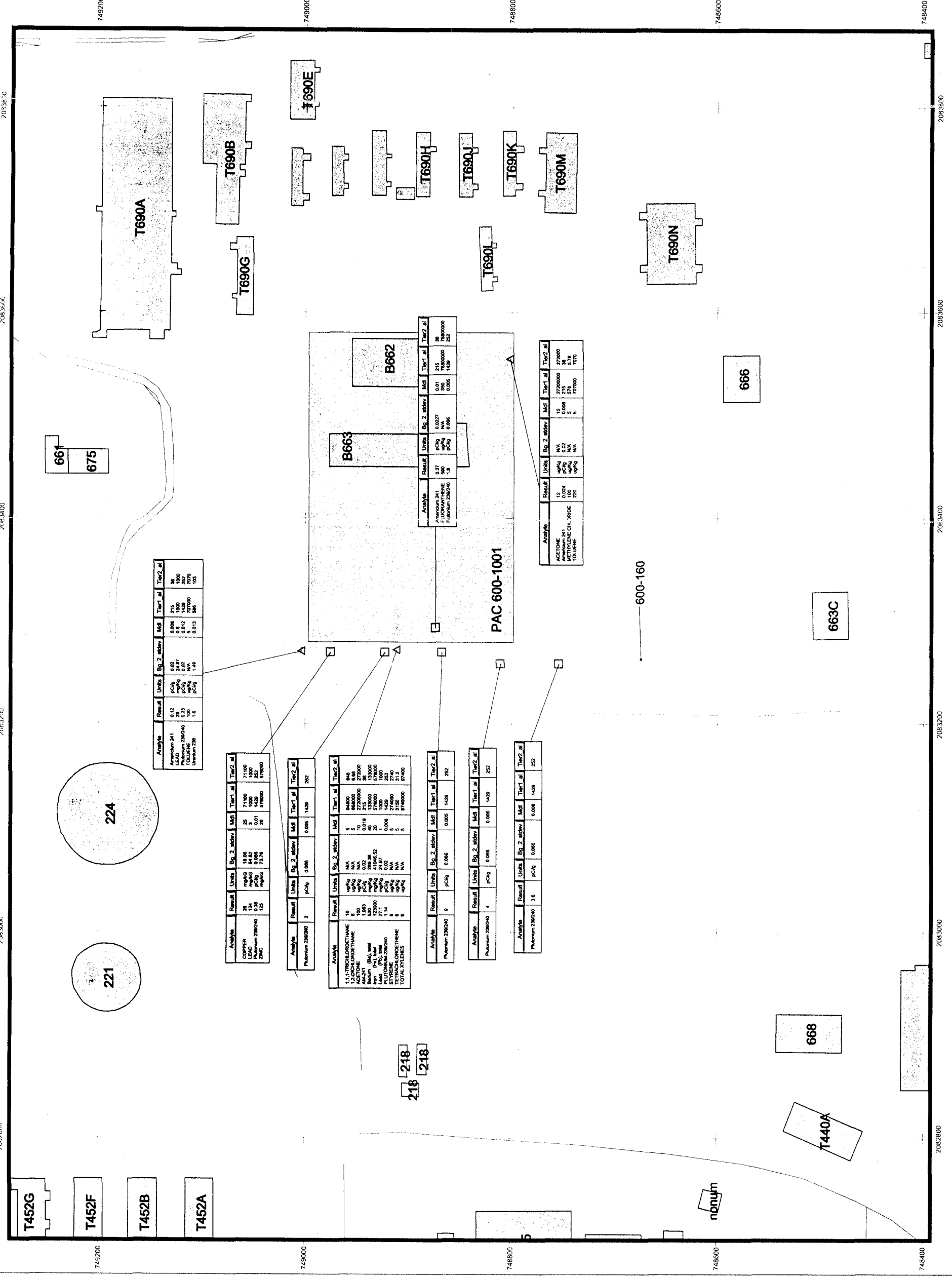


Figure 4

Characterization Sampling Locations and Results Greater Than Background Means Plus Two Standard Deviations and Method Detection Limits IHSS Group 600-1

KEY



PAC



Building



Paved area



Dirt road

Stream, ditch, or drainage

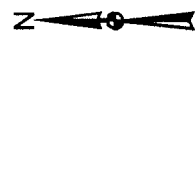
• Tier 1 Exceedance

• Tier 2 Exceedance

Greater Than Background
or MDL

Less Than Background
or MDL

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40 0 40 80 Feet
Scale = 1:1,100
Slate Plane Coordinate Projection
Colorado Central Zone
Datum: NAD 27

U.S. Department of Energy
Rocky Flats Environmental Technology Site

Prepared by:



Page: 2083400-0000 1/10/2000 10:00:00 AM

December 2002

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Analyte	Result	RI	Tier 1	Tier 2	Background	Units
Acetone	110.0000	42.0000	1000000.0000	1000000.0000	NA	ug/g
Benzene	230.0000	42.0000	5170000.0000	5170000.0000	NA	ug/g
Chlorobenzene	230.0000	42.0000	5170000.0000	5170000.0000	NA	ug/g
Fluorene	230.0000	42.0000	5170000.0000	5170000.0000	NA	ug/g
Phenanthrene	230.0000	42.0000	5170000.0000	5170000.0000	NA	ug/g
Pyrene	230.0000	42.0000	5170000.0000	5170000.0000	NA	ug/g

Analyte	Result	RI	Tier 1	Tier 2	Background	Units
Acetone	110.0000	42.0000	1000000.0000	1000000.0000	NA	ug/g
Benzene	230.0000	42.0000	5170000.0000	5170000.0000	NA	ug/g
Chlorobenzene	230.0000	42.0000	5170000.0000	5170000.0000	NA	ug/g
Fluorene	230.0000	42.0000	5170000.0000	5170000.0000	NA	ug/g
Phenanthrene	230.0000	42.0000	5170000.0000	5170000.0000	NA	ug/g
Pyrene	230.0000	42.0000	5170000.0000	5170000.0000	NA	ug/g

Analyte	Result	RI	Tier 1	Tier 2	Background	Units
Acetone	110.0000	42.0000	1000000.0000	1000000.0000	NA	ug/g
Benzene	230.0000	42.0000	5170000.0000	5170000.0000	NA	ug/g
Chlorobenzene	230.0000	42.0000	5170000.0000	5170000.0000	NA	ug/g
Fluorene	230.0000	42.0000	5170000.0000	5170000.0000	NA	ug/g
Phenanthrene	230.0000	42.0000	5170000.0000	5170000.0000	NA	ug/g
Pyrene	230.0000	42.0000	5170000.0000	5170000.0000	NA	ug/g

Analyte	Result	RI	Tier 1	Tier 2	Background	Units
Acetone	110.0000	42.0000	1000000.0000	1000000.0000	NA	ug/g
Benzene	230.0000	42.0000	5170000.0000	5170000.0000	NA	ug/g
Chlorobenzene	230.0000	42.0000	5170000.0000	5170000.0000	NA	ug/g
Fluorene	230.0000	42.0000	5170000.0000	5170000.0000	NA	ug/g
Phenanthrene	230.0000	42.0000	5170000.0000	5170000.0000	NA	ug/g
Pyrene	230.0000	42.0000	5170000.0000	5170000.0000	NA	ug/g

Analyte	Result	RI	Tier 1	Tier 2	Background	Units
Acetone	110.0000	42.0000	1000000.0000	1000000.0000	NA	ug/g
Benzene	230.0000	42.0000	5170000.0000	5170000.0000	NA	ug/g
Chlorobenzene	230.0000	42.0000	5170000.0000	5170000.0000	NA	ug/g
Fluorene	230.0000	42.0000	5170000.0000	5170000.0000	NA	ug/g
Phenanthrene	230.0000	42.0000	5170000.0000	5170000.0000	NA	ug/g
Pyrene	230.0000	42.0000	5170000.0000	5170000.0000	NA	ug/g

Analyte	Result	RI	Tier 1	Tier 2	Background	Units
Acetone	110.0000	42.0000	1000000.0000	1000000.0000	NA	ug/g
Benzene	230.0000	42.0000	5170000.0000	5170000.0000	NA	ug/g
Chlorobenzene	230.0000	42.0000	5170000.0000	5170000.0000	NA	ug/g
Fluorene	230.0000	42.0000	5170000.0000	5170000.0000	NA	ug/g
Phenanthrene	230.0000	42.0000	5170000.0000	5170000.0000	NA	ug/g
Pyrene	230.0000	42.0000	5170000.0000	5170000.0000	NA	ug/g

Analyte	Result	RI	Tier 1	Tier 2	Background	Units
Acetone	110.0000	42.0000	1000000.0000	1000000.0000	NA	ug/g
Benzene	230.0000	42.0000	5170000.0000	5170000.0000	NA	ug/g
Chlorobenzene	230.0000	42.0000	5170000.0000	5170000.0000	NA	ug/g
Fluorene	230.0000	42.0000	5170000.0000	5170000.0000	NA	ug/g
Phenanthrene	230.0000	42.0000	5170000.0000	5170000.0000	NA	ug/g
Pyrene	230.0000	42.0000	5170000.0000	5170000.0000	NA	ug/g

Analyte	Result	RI	Tier 1	Tier 2	Background	Units
Acetone	110.0000	42.0000	1000000.0000	1000000.0000	NA	ug/g
Benzene	230.0000	42.0000	5170000.0000	5170000.0000	NA	ug/g
Chlorobenzene	230.0000	42.0000	5170000.0000	5170000.0000	NA	ug/g
Fluorene	230.0000	42.0000	5170000.0000	5170000.0000	NA	ug/g
Phenanthrene	230.0000	42.0000	5170000.0000	5170000.0000	NA	ug/g
Pyrene	230.0000	42.0000	5170000.0000	5170000.0000	NA	ug/g

Analyte	Result	RI	Tier 1	Tier 2	Background	Units
Acetone	110.0000	42.0000	1000000.0000	1000000.0000	NA	ug/g
Benzene	230.0000	42.0000	5170000.0000	5170000.0000	NA	ug/g
Chlorobenzene	230.0000	42.0000	5170000.0000	5170000.0000	NA	ug/g
Fluorene	230.0000	42.0000	5170000.0000	5170000.0000	NA	ug/g
Phenanthrene	230.0000	42.0000	5170000.0000	5170000.0000	NA	ug/g
Pyrene	230.0000	42.0000	5170000.0000	5170000.0000	NA	ug/g

Analyte	Result	RI	Tier 1	Tier 2	Background	Units
Acetone	110.0000	42.0000	1000000.0000	1000000.0000	NA	ug/g
Benzene	230.0000	42.0000	5170000.0000	5170000.0000	NA	ug/g
Chlorobenzene	230.0000	42.0000	5170000.0000	5170000.0000	NA	ug/g
Fluorene	230.0000	42.0000	5170000.0000	5170000.0000	NA	ug/g
Phenanthrene	230.0000	42.0000	5170000.0000	5170000.0000	NA	ug/g
Pyrene	230.0000	42.0000	5170000.0000	5170000.0000	NA	ug/g

Analyte	Result	RI	Tier 1	Tier 2	Background	Units
Acetone	110.0000	42.0000	1000000.0000	1000000.0000	NA	ug/g
Benzene	230.0000	42.0000	5170000.0000	5170000.0000	NA	ug/g
Chlorobenzene	230.0000	42.0000	5170000.0000	5170000.0000	NA	ug/g
Fluorene	230.0000	42.0000	5170000.0000	5170000.0000	NA	ug/g
Phenanthrene	230.0000	42.0000	5170000.0000	5170000.0000	NA	ug/g
Pyrene	230.0000	42.0000	5170000.0000	5170000.0000	NA	ug/g

Analyte	Result	RI	Tier 1	Tier 2	Background	Units
Acetone	110.0000	42.0000	1000000.0000	1000000.0000	NA	ug/g
Benzene	230.0000	42.0000	5170000.0000	5170000.0000	NA	ug/g
Chlorobenzene	230.0000	42.0000	5170000.0000	5170000.0000	NA	ug/g
Fluorene	230.0000	42.0000	5170000.0000	5170000.0000	NA	ug/g
Phenanthrene	230.0000	42.0000	5170000.0000	5170000.0000	NA	ug/g
Pyrene	230.0000	42.0000	5170000.0000	5170000.0000	NA	ug/g

Analyte	Result	RI	Tier 1	Tier 2	Background	Units
Acetone	110.0000	42.0000	1000000.0000	1000000.0000	NA	ug/g
Benzene	230.0000	42.0000	5170000.0000	5170000.0000	NA	ug/g
Chlorobenzene	230.0000	42.0000	5170000.0000	5170000.0000	NA	ug/g
Fluorene	230.0000	42.0000	5170000.0000	5170000.0000	NA	ug/g
Phenanthrene	230.0000	42.0000	5170000.0000	5170000.0000	NA	ug/g
Pyrene	230.0000	42.0000	5170000.0000	5170000.0000	NA	ug/g

Analyte	Result	RI	Tier 1	Tier 2	Background	Units
Acetone	110.0000	42.0000	1000000.0000	1000000.0000	NA	ug/g
Benzene	230.0000	42.0000	5170000.0000	5170000.0000	NA	ug/g
Chlorobenzene	230.0000	42.0000	5170000.0000	5170000.0000	NA	ug/g
Fluorene	230.0000	42.0000	5170000.0000	5170000.0000	NA	ug/g
Phenanthrene	230.0000	42.0000	5170000.0000	5170000.0000	NA	ug/g
Pyrene	230.0000	42.0000	5170000.0000	5170000.0000	NA	ug/g

Analyte	Result	RI	Tier 1	Tier 2	Background	Units
Acetone	110.0000	42.0000	1000000.0000	1000000.0000	NA	ug/g
Benzene	230.0000	42.0000	5170000.0000	5170000.0000	NA	ug/g
Chlorobenzene	230.0000	42.0000	5170000.0000	5170000.0000	NA	ug/g
Fluorene	230.0000	42.0000	5170000.0000	5170000.0000	NA	ug/g
Phenanthrene	230.0000	42.0000	5170000.0000	5170000.0000	NA	ug/g
Pyrene	230.0000	42.0000	5170000.0000	5170000.0000	NA	ug/g

2083400

2083350

2083300

2083250

2083200

2083150

2083100

2083050

7489000

7488950

7489000

7488950

7489000

7488950

2083050

2083100

2083150

2083200

2083250

2083300

2083350

2083400

Figure 5
Excavation Area
IHSS Group 600-1

KEY



PAC



Building



Paved area



Dirt road

Stream, ditch, or drainage

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N



10 0 10 20 Feet

Scale = 1:500

State Plane Coordinate Projection
Colorado Central Zone
Datum: NAD 27

U.S. Department of Energy
Rocky Flats Environmental Technology Site

Prepared by:



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December 2002

PAC 600-1001

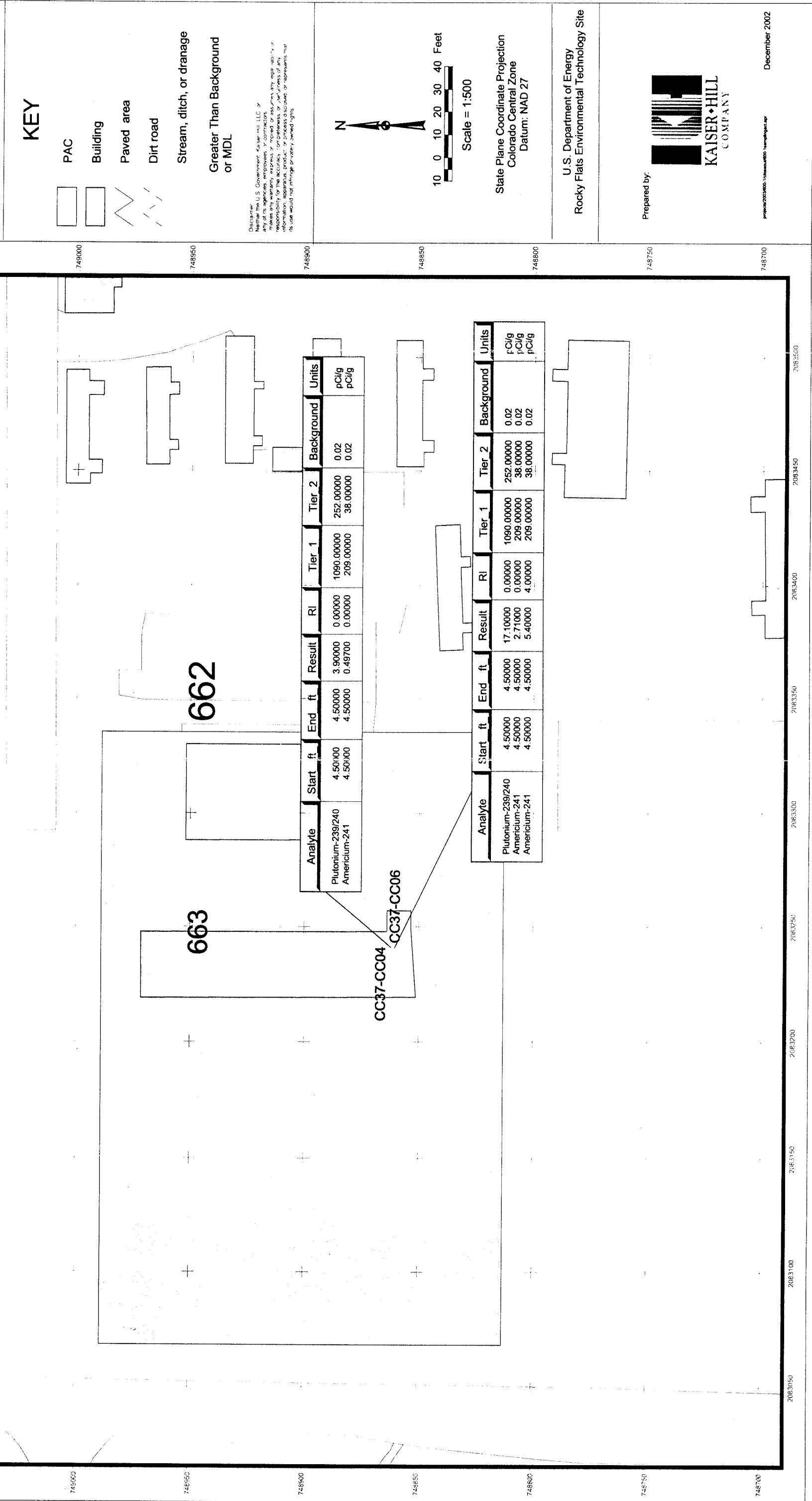
B663

B662

Excavation Area

83

Figure 6
Confirmation Sampling Results
Greater Than Background
Means Plus Two Standard
Deviations or Method
Detection Limits
IHSS Group 600-1



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